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COMPUTING INTERNATIONAL

MARCH 1988

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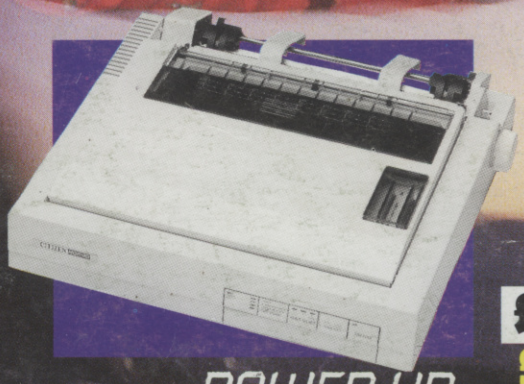

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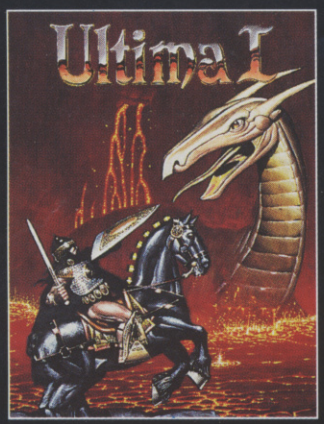

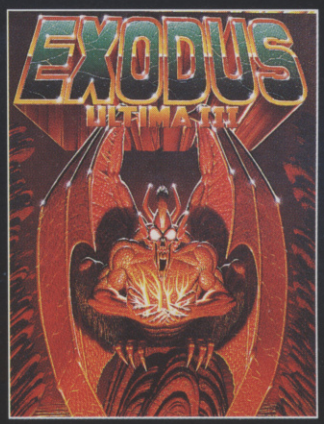

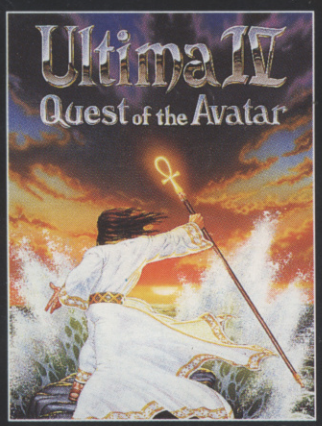

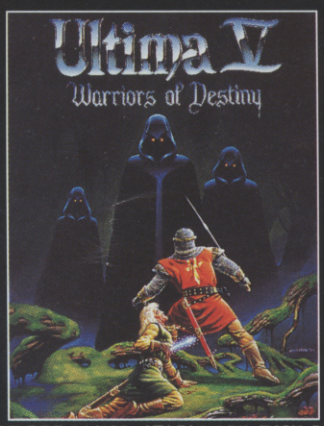

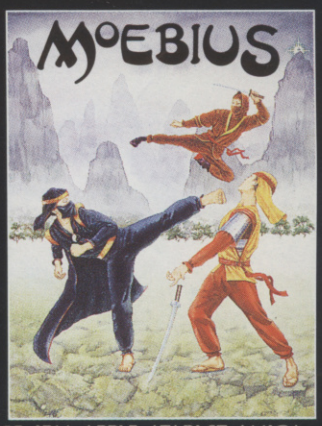

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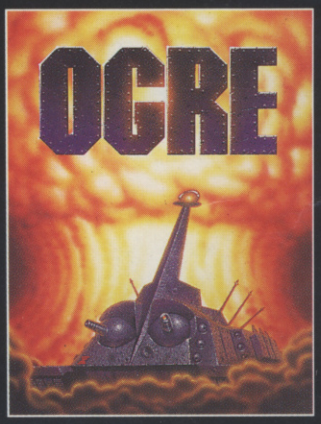

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CCI View

Dear Reader—

Time . . . If you enjoy what you read, time will speed. If you find time passing snailpace, you probably won't even finishing reading this.
Time . . .

It must seem to many people the 64, the 128, even the Amiga have been around, well, forever. They'll tell you the 64 was too expensive and now it is on its last legs. The 128? Nobody ever wrote anything for it, no wonder it was a failure. And the Amiga? It can't succeed without matching the ST's price and anyway there isn't any software for it yet. We hear 'conventional wisdom' like that from many people inside and outside the computer industry. Yet 'conventional wisdom' — uniformed public perception — is nearly always wrong and it's almost always out-of-date too.

For example, the U.K. perception that the Spectrum was a rival for the C64 largely because it was cheaper. Yet around the world the C64 outsold the Spectrum by **millions**. And now, when the popular idea is that the 64 is dying, CBM are almost certainly going to breath fresh life into the most popular computer in the world with a new version containing the cheaply produced 3½in disk drive. So all the 64's hundreds or thousands of programs can be put into the new, more convenient format for the millions, yes possibly millions of future 64 owners.

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It is now obvious from the pages of this and recent CCI's that excellent 128 software exists. It just needed the time for expertise in the machine to grow and for developers to realise the machine's technical and market potential.

And the Amiga? Well, some two years ago, when it began to appear on the computer scene, many impatiently growled "Where is all the software to exploit this so-called wonder machine? Not already here? Forget it, the computer's too dear anyway. The Amiga'll go nowhere!"

Now, there are probably hundreds of different Amiga programs and they are increasing rapidly — especially in entertainment. Oh yes, and every software house in the land is proudly claiming it is going to "concentrate on the 16 Bit market".

R. J. Mical, one of the creators of the Amiga, has said that it was "a common dream" that made for the outstanding collaboration among those who worked on what was going to be 'the best games computer ever', codenamed Loraine, back in the beginning in 1982. Over five years . . . a long time for the If-it-isn't-here-today-complete-with-all-bells-and-whistles-it's-a-failure Brigade but not a great deal in the calendar of technology, even of computers.

Except in road accidents, very little happens as quickly as you think it might. Real progress and change requires effort and determination — and time. In Latin America, Mexico is about to hold the first ever Commodore Show. In India and in many other countries, the 64 is just beginning to arrive **now.** There are presently more than 1 millon 128's in use around the world — a huge and still growing market. It is not surprising products are beginning to flow.

Our sister publication — Amiga User International — has just gone monthly and fully worldwide, two years after it started. Many people thought even that would never come about.

Our reaction to time is too often a measure of our own perception of how life **should** happen, not how it does. Perhaps Einstein should have said "Time is relative". For it seems that the closer we get to an object or an objective, the more impatient for its fulfilment we become. It might seem an odd thought, but it could be that the best time for Commodore computers is still to come . . .
Yours sincerely,

Antony H. Jacobson,
Managing Editor and Publisher

Zeppelin flies in

Good games just don't happen — they are meticulously planned, that is the philosophy behind new budget gamehouses. Zeppelin.

Take some of the best programmers and designers around, put them together with the most talented graphic and music artists, and fuse them in a hothouse games-writing environment, and you may get them.

The backbone of Zeppelin are the programmers — even the three directors have programming experience. Derek Brewster is a well-known programmer and has achieved chart success at both full-price and budget level, with both arcade and adventure. As a journalist he enjoyed contacts with the software industry and the magazine readers, and was never slow to speak out on any issue which affected the computer games-buying public.

Zeppelin have made a thorough study of the software market and have thought long and hard on its future. It was decided that good quality programs at a reasonable price was the way forward. The price of £2.99 would distance the company's releases from lacklustre £1.99 product and provide a greater revenue to plough back into program development and promotion.

Zeppelin's first releases are now complete and will soon be appearing.

Zybex, on the Commodore 64/128, is the flagship of the three releases, with the kind of graphics and gamesplay which, Zeppelin claim, would otherwise command a ten pounds asking price, but which Zeppelin will offer at £2.99.

Sabotage on the Commodore 64/128 has says Zeppelin, "great sound and super music and shows how shoot em up should be."

Music City — disk meets disk!

Micronet is going musical with Music City. Music City is an on-line computer music magazine, and part of the Micronet service which is based on British Telecom's Prestel computer network and operated by Telemap Ltd. In addition to editorial coverage, Music City will allow computer users to download music software directly into their machines.

Micronet has also taken a lead ovr the issue of music copyright in this area, and has reached agreement with the Mechanical Copyright Protection Society (MCPS) whereby royalty payments will be made whenever appropriate. "If a piece of music is subject to copyright then it doesn't matter whether it's played on a home micro or by an orchestra — if you ignore copyright you're breaking the law," says Micronet's Phil Godsell. "By talking to the MCPS Micronet is taking a lead which we hope others will follow."

Music City will offer music telesoftware for the Commodore 64. The area will also cover the latest developments in computer music, review related hardware and software, feature general articles on computer music and include a letters and contacts section.

"There are thousands of computer users interested in computer music," commented Telemap's Marketing Manager, Lynne Thomas, "In addition to the core Micronet product, we now offer them a service tailored to their needs."

Contact: Micronet 01 278 3143

John Lewis and Nigel Stevens 'research' for '19'!

19? You've been drafted!

Cascade Games have announced the release of '19 part 1 — Boot Camp', the "ultimate" simulation of true warfare.

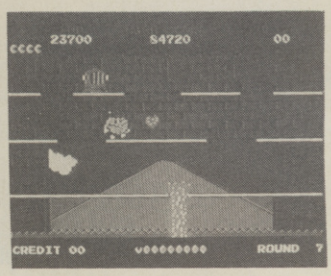
'19 part 1 — Boot Camp' is a game based on the Paul Hardcastle hit, which follows the progress of a 19 year old American draftee from basic training through to the Vietnam War.

It includes detailed graphic images and sequences of arcade type action with the sound track being a coded version of the actual single.

'19 part 1 — Boot Camp' takes you through basic training and will determine at what level you enter '19 part 2 — Vietnam'. Being able to take your score from one game to the next is just one of the many innovative features of this ultimate adventure/arcade game.

Within the package of '19 part 1 — Boot Camp' will be a detailed, full colour map of the playing area (war zone) which plays an essential part in progressing through the game.

'19 part 1 — Boot Camp' is on Commodore 64 at £9.95, (disk at £14.95)



Pac's back

Remember Pac? The dot munching, ghost grabbing, addictive arcade phenomenan.

Pac — perhaps the single most copied and cloned computer character ever, is back, starring in his own adventure cartoon, Pacland.

Quicksilva Stephen Hall's grand slam label have announced that they have licensed from Namco-Atari, the home computer version of Pac's greatest adventure.

Set on his home island, Pac resolves to help a lost fairy home to Fairyland. To succeed, Pac must pass through towns, forge through rugged mountains, cross dangerous ravines and trek across deserts.

Throughout the adventure, Pac is hindered by his relentless enemies Blinky, Pinky, Inky and Clyde. These persistant paranormals — Ghosts — from the original hit arcade game dwell in Pacland. They do all in their power to prevent Pac succeeding.

Pac has allies too. Power pills are ready and waiting, and when eaten the ghosts start trembling and can be caught — leaving their eyes to flee the screen ready for a rapid regeneration.

The game is only completed when you rejoin your family in Pac Town.

Pac-Land is a huge place, and Quicksilva claim to have included all the elements of the coin-op game. For the home computer version Pac must attempt four very different journeys, giving the full flavour and complexity of the gameplay which made the arcade machine such a huge hit.

Pac Man is a worldwide phenomenon. There are scores of imitators — in the arcades and in the home — but there is Quicksilva tells us only one Pac-Land. Coming for the C64 and Amiga.

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The last brain game?

If your idea of a game involving walls and tiles is Breakout then you should read on . . .

After the success of both Colossus Chess and Colossus Bridge, there are you might think — really very few popular brain-games left but CDS Software has found one Mah-Jong.

This ancient oriental game has become increasingly popular in the West, and the computerised version follows in most respects the rules recommended by the British Mah-Jong Association.

Taking the part of the East Wind, you do battle with the computer, playing against the North, West and South Winds picking up and discarding tiles from the central playing area, with your hand represented using 3D graphics.

If the rules of Mah-Jong are new to you, don't worry — the program includes a demonstration mode and comes complete with detailed instructions. Four tutorial sessions are provided for beginners to the game. Other learner-friendly features include the facility to peep at your opponents' hands, (nice that) hints on play given by the computer, adjustable speed of play and the option to have discards placed face up or face down. It's possible to learn by your mistakes, too — the game can be taken back to the position it reached before you made the last discard, and the current hand can be replayed in the current game — as many times as you like, until you get it right!

Colossus Mah-Jong is on the Commodore 64 — at £9.99 (c) £14.99 (d).

Citizen's new colour HQP-40

Citizen Europe has added the HQP-40, a new, colour 24-pin dot matrix, to its range of twelve computer printers.

An 80 column printer, the HQP-40 will print in draft, correspondence or near letter quality at speeds of 200, 132 and 66 characters per second respectively, and comes with a two year warranty on all parts and labour.

Optimum paper handling

Advanced paper control has been achieved with the inclusion of a push/pull tractor feed giving greater control over paper movement. Bottom feed is also standard: this feature is of benefit especially when printing labels or multi-part stationery.

Five additional fonts

The HQP-40 has one resident font, but Citizen Europe is creating a first in 24-pin history by offering five additional optional plug-in fonts, including Times Roman, Univers and Helvetica, giving a wider choice and scope in professional presentation of data than any other printer supplier.

All fonts can be used in a variety of print styles including expanded, condensed, italics, bold, proportionally spaced etc.

The advantages of seven colours

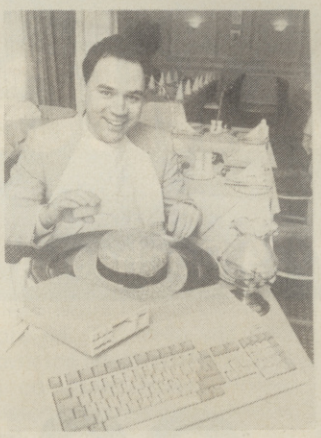
The optional colour kit which can be easily fitted by the user costs just £50 including the colour ribbon and enables seven colour printing to be incorporated into both text and graphics producing professional eye-catching documents.

Compatibility

The HQP-40 includes both an 8 bit parallel Centronics interface and an RS 232 serial interface as standard and can emulate the Epson LQ series. An optional IBM Proprinter emulation is available via a plug-in, slim-line card.

A 24K input buffer allows you to store downloadable characters and provides extensive buffering resources.

R.R.P. £499.00



Austin excelerates his digestion

Make Austin eat his hat (and get an Amiga!)

Evesham Micros are giving away an Amiga for every different piece of commercially available software for the Commodore 64 found to be compatible with the Commodore 1541C disk drive, but not the latest Evesham Excelerator, by March 1988.

The competition has been organised by Evesham because they are anxious to ensure that the Excelerator is compatible with all Commodore 64 software. The Excelerator, which Richard Austin Evesham MD says "Is both smaller and aesthetically more attractive than Commodore's disk drive." Retails for £159.95 which is £40 cheaper than the Commodore disk drive.

Commenting on the competition Richard Austin, said "We have tried to make the Excelerator as efficient as possible but we cannot test every computer game because there are too many of them. Who better than the public to attempt this task for us?" Richard added "Despite the scale of this competition, however, I doubt whether we will have to give away many Amigas, indeed if we have to give away more than two I will eat my hat!"

All entrants have to do is write down on a postcard the name of a Commodore 64 program which can be obtained from a computer shop and is compatible with the Commodore disk drive 1541C but not with the Evesham Excelerator. The first entry received for each different program will win an Amiga. Postcards should be sent to Evesham Micros, C/O Solution Public Relations, Carlton House, 11-12 Marlborough Place, Brighton.

Mastertronic Mad X

Mastertronic have, as usual been creative and introduced a new idea and a new label —MAD X.

MAD X will replace the current MAD (Mastertronic Added Dimension) range. However, the price for MAD X will remain £2.99. The range will still be the premium titles that MAD established with classics such as Spellbound. Flash Gordon, Amaurote and Motos. And the games will still come out on the popular 8 bit machines. The X stands for EXTRA: On every MAD X tape, will be a B side.

This game will either be a previously released game or an unreleased game, but either way it will be a different game to that on side A. MAD X will , infact, offer 2 games on one tape. With at least one new MAD X title every month.

The new MAD X range despite having an extra game, will be available at the same price as the MAD games are currently available for £2.99.

Mastertronic strongly believe that the principle of the B side, as in the record industry will work in the computer field.

This move will not affect any of the other ranges that Mastertronic currently carry at £2.99 — the Americana, Rack-It and Entertainment USA. These will remain in their current mould. Nor will it affect the Mastertronic range of £1.99 games these will remain as Mastertronic modestly put it, "one great game per tape."

The first title on the MAD X range is A Side Energy Warrior B Side Molecule Man on the Energy Warrior Molecule Man.

The second MAD X title is Rockford and Back to Reality also on the 64.

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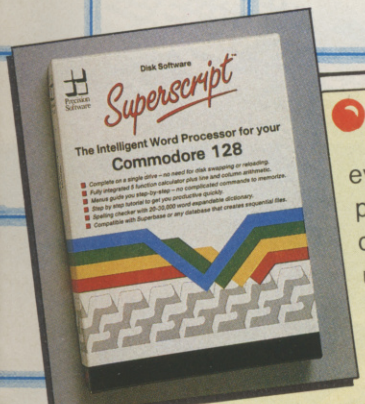

SuperScript gives you everything you need for professional word processing in one easy to use package. Its menu command structure puts you immediately at ease, with no complicated commands to memorise, yet SuperScript combines business-style editing, spell checking, calculator, row and column arithmetic and full mail merge facilities. The phrase glossary feature enables you to store whole passages of text, or command sequences and recall them with a simple key.

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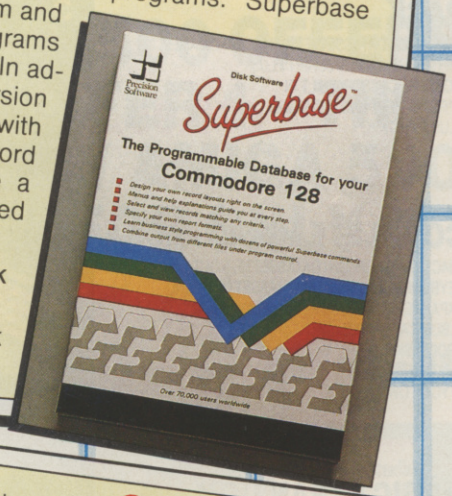

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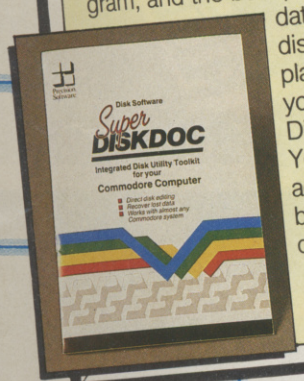

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Addictive's Arac

Addictive Games are to announced the re-release, on their budget label, of Arac and the Arachnidroid.

You are Arac, a droid that can jump, glide, fire a net to capture creatures and even imprison them until you need their help. You have a mission, the aim of which is to deactivate three reactors that are threatening to over-heat with devastating results.

To achieve your aim you must first find the components of your arachnidroid and assemble them.

Arac and the Arachnidroid is available on Commodore 64 cassette at £12.99 disk at £6.99.

Mini Office II named best package

A leading consumer finance television show has voted Mini Office II (CCI's Oskar Winner) Britain's top home business package.

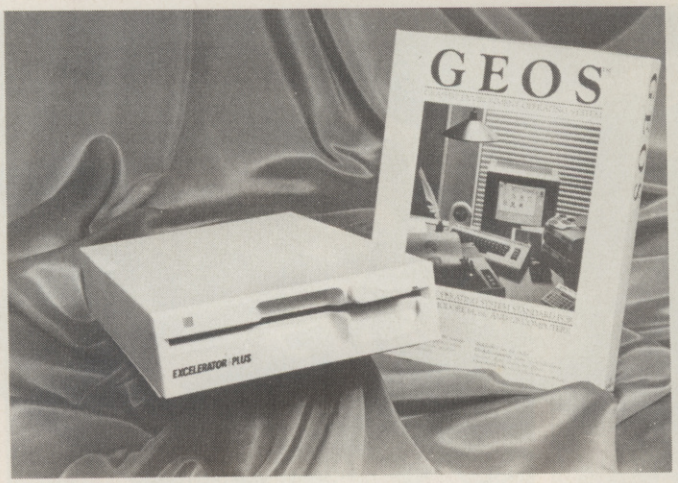
Moneyspinner, the Channel 4 TV programme with a regular viewing audience of two million, gave maximum points to the Database Software package in face of stiff competition from the three other outstanding titles nominated.

Mini Office II overcame the challenge of Supercalc 3, Money Manager Plus and yet another Database product — PlanIt — to win the top award.

Judged on the basis of three main criteria — value for money, ability to do the job in hand, and ease of use — Mini Office II came out a clear winner in each category.

"We were looking for a software package which — in our opinion — would be most suitable for our viewers attempting to produce accounts on their home computers," said Belinda Giles, Moneyspinner's producer.

"In Mini Office II, we found a package that was remarkably good value for money, did everything that was required of it, but — most important of all — was truly easy to use."



Now let the Excelerator fly into orbit with GEOS in tow!

Evesham Micro's Excelerator disk drive for the Commodore 64 now comes packaged with the leading graphics package for the Commodore, GEOS (Graphic Environment Operating System) included free. The entire package retails at £159.95 and is still £40 cheaper than the latest Commodore disk drive.

GEOS, written by Berkeley Software, has a recommended retail price of £49.95 making the new Excelerator package very good value.

Evesham Micro's Managing Director, Richard Austin, said "It is the graphics package for the Commodore 64." With the proven success of the Excelerator and now GEOS there has never been a better time to buy a disk drive for the Commodore.

GEOS includes: deskTop, organizer and file manager; geoPaint, powerful graphics editor; geoWrite, easy to use, graphics based word processor; diskTurbo, fast file loader; desk accessories, alarm clock, calculator, notepad, photo album and text album.

Contact: Evesham Micros, 63 Bridge Street, EVESHAM, Worcs WR11 4SF. 0386-41989.

Epson's new LQ printer

Claiming to bring letter quality printing to within the economic range of a much wider audience, Epson's new 24-pin letter quality printer, the LQ500, has an RRP (ex-VAT) of £385.

The low end complement to Epson's range of letter quality printers, the LQ500 has print speeds of 150cps at 10cpi in draft and 50cps in letter quality. Operational noise is well below 55dBA.

Pullfeed tractor and friction feed are standard on the LQ500. A cut sheet feeder is available as an option.

In addition to draft mode, the LQ500 has two standard letter quality fonts, Roman and Sans Serif, with a slot which takes one of any of four further letter quality fonts — Courier, Prestige, Script and OCR-B. Once selected, fonts can be easily changed, using the Epson SelecType panel.

Print modes on the LQ500 are draft/letter quality; double width; double strike; underlined; super/subscript; condensed; emphasised; double height; and italic.

An 8-bit parallel Centronics interface is standard, and there are options for five alternate RS232 and IEEE488 interfaces.

Dimensions of the LQ500 are height: 5.5 inches (139mm); width: 15.4 inches (390mm); and depth 12.6 inches (320mm). The unit weighs 7kgs.

Anti-crime Network

Computer Crime will be fought by a new company, Racal-Guardata, which aims to provide a total network security service to mainframe computer users.

An initial product is the Watchword password generator. This is a hand-held unit used in conjunction with security software in the mainframe computer which the user, with screen and keyboard terminal, is attempting to access.

The software puts a multi-digit numerical "challenge" on the terminal screen which the user reads and keys into his Watchword, together with his personal identification number. The hand-held unit generates the correct solution to the challenge and the user keys it into the computer terminal, gaining access to the mainframe. Racal-Guardata claims the system is "highly resistant" to tampering.

Contact Racal-Guardata Tel: 0252 622144.

The new alternatives

The latest releases from the up and coming budget house Alternative Software are Micro Ball and Football Frenzy for the Commodore 64/128.

Football Frenzy is a text adventure game, but with a difference. Where as most adventures are based on the Tolkienesque background, this game is actually based on football. You have only 3 days to go to the Cup Final. What could possibly go wrong?

Micro Ball is a pin ball adventure game. Written by Steve Evans, who obtained a first in Maths at Oxford University, this game is another example of the work of this talented programmer who also wrote "Who Dares Wins II". Micro Ball, and Football Frenzy are at the budget price of £1.99.

Excalibur is a full colour graphic and text adventure set in Castle Camelot.

Mirrorsoft goes to the cinema

Mirrorsoft has announced an agreement with Cinemaware Corporation, formerly Master Designer Software, Inc., to distribute the next six titles in the Cinemaware interactive entertainment computer software range exclusively in the UK and Europe with the exception of France.

Mirrorsoft has been exclusive UK distributor of the first 4 titles of the range Defender of the Crown, SDI, The King of Chicago, Sinbad and the Throne of the Falcon, through its distribution agreement with Mindscape, who were exclusive UK distributors. Cinemaware Corporation has now decided to distribute the next 6 titles direct and has awarded Mirrorsoft the rights.

The original concept for Cinemaware was developed by Bob Jacob, President, who coined the phrase "interactive movies" to describe the techniques and creative aspects of Cinemaware, which uses directors, producers, art staff, music and special effects to publish their award-winning products.

Cinemaware will introduce the first two new titles shortly: The Three Stooges a comedy classic with arcade action, over 1 meg of sound, and laugh-a-minute storyline, and Rocket Ranger bringing loads of action, romance, thrills and spills.

Changing your tone

A new digital processor can now let users have an instant sex change.

At the flick of a button, a woman using the Digial Voice Changer can alter her speech so that it sounds like a man's.

The battery-powered unit — which fits into the pocket or handbag — simply plugs into a telephone handset. It works by modulating the voice either up or down in pitch. And by using digital processing and converting it back into an analogue signal, it can retain the normal speech flows without the robot-speak of many other speech convertors.

Marketed by Electronic Security Countermeasures of Tel Aviv, Digital Voice changer will shortly be available in the UK from about £110.

ESC says: 'It was originally developed for security uses, but we quickly found that many individuals — particularly women — were using it to screen their telephone calls to cut out the sex pests. The voice changer even has a little extra — we have included the sound of a dog barking to deter any pests.

'Some men also like the voice changer so they can put on a pert, secretary-style voice to tell callers that 'the boss' is at lunch or in a meeting.

And when his wife asks who the secretary was, is she going to believe it was him?

A Motorola Risc

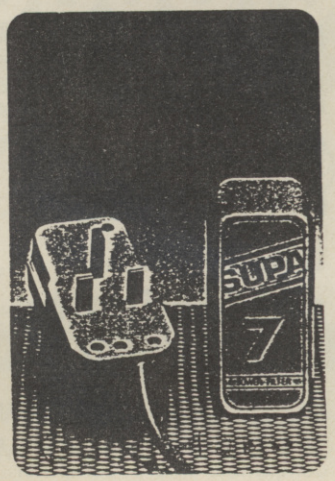
The latest version of Motorola's 68000 chip family is to be delivered by December 1988.

The launch of the first of a new series of risc (reduced instruction set)-based microprocessors, dubbed the 78000, is expected next month.

This will be followed, by next December, by the third of its flagship 68000 series, the 68040, breaking the 1,000 transistor-per-chip barrier.

Motorola intended to take the 68000 series, used by CBM, IBM, Apple, ICL and many major European suppliers, beyond the 68040.

Motorola say that risc architecture will enable Motorola and other chip manufacturers to move towards standard operating software. Although Motorola's 68000 and its rival Intel's 8086 series can run each other's microcode, this is 'very inefficent' compared with emulation under risc.



While risc is not as efficient as complex instruction set computer (cisc) technology chips, Motorola say this was compensated for by easier chip development.

Motorola say every major computer supplier is now assuming their competition will 'leapfrog' them within 18 months. This has the effect of reducing design cycle times to about six months.

SUPA 7 Protector

Warwick Products have announced the launch of the SUPA 7, a new Power Filter plug to protect all electronic office equipment from electrical interference through the mains.

The SUPA 7, rated at 7 amps, performs two functions, preventing voltage spikes from getting through to the customer's expensive equipment, and filtering out radio frequency interference (RFI) which is a major cause of electronic malfunction. Voltage spikes and RFI are caused by any electrical appliance switching on and off, e.g. electric motor or light.

The SUPA 7 is useful for protecting computers, word processors, electronic typewriters, photocopiers, electronic tills, telephone systems, telex machines, videos and burglar alarms.

The SUPA 7 is claimed as much more powerful than equivalent plugs and costs £14.95 excl. VAT plus 50p P & P.

Contact: Warwick Products
Tel: 01 538 2535.

New CD standard

"Write once" specifications for Compact Disk have been agreed by two major CD companies, Philips of The Netherlands and Sony of Japan. The digital disks will allow 600m characters of text to be recorded by the user.

The move follows the specifications, widely followed, that have been laid down for CD audio (gramophone records) and CD ROM, which are recorded with text by an information supplier (reference for example) and stamped out in a similar way for distribution.

Write Once, puts the once-only, non-erasable recording process in the hands of the end user. It wil be employed like other optical disk systems, for imformation storage where quick access to a small part of a large database is important.

Philips/Sony Write Once will be in competition with 5.25-inch WORM (write once read many times), pioneered by Optotech and Information Storage in the US, and taken up by companies like Toshiba and Hitachi in Japan.

Optical disk sales seem unlikely to compare with until erasable optical media are perfected and are taken up by the computing industry in widely used read-write applications.

FREE SOFTWARE

Important Notice

It appears that possibly due to the Christmas post not all those who sent in the three vouchers for the free software offer made in CCI late in 1987 have received their disk or cassette. The period for the offer is now closed but if you have sent in your vouchers and not yet received the free software please write and let us know. We will check you name against our list and ensure you receive the software. Please state whether you require disk or cassette.

New low-cost PC-based fax/telex outperforms the most sophisticated fax machines

A sophisticated sub-system that allows any PC XT/AT or compatible micro computer to send and receive fax messages to or from any International Group III fax machine or similarly equipped Personal Computer anywhere in the world has been introduced by Softech Professional Systems Limited of Tonbridge, Kent.

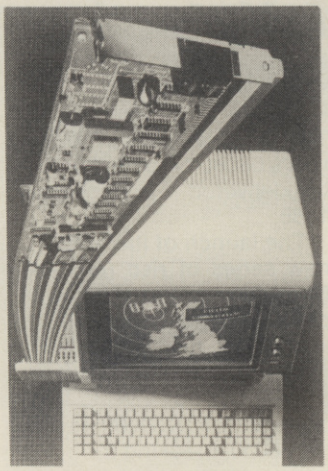
Softech's PC-FAX offers facilities beyond the scope of the most sophisticated fax machines, requires neither a dedicted telephone line nor a modem, yet costs only £750, some 50% less than the cheapest fax. It can be used with any IBM PC or true PC-compatible having a hard disk drive and a minimum of 512K RAM.

The system offers users the facility to send messages as either a fax or a telex, or via electronic mail to a personal mail box. It will caputure, transmit and receive any word-processed document, any desk-top published image and any paint-brush system image.

It allows the user to produce mixed text and image documents either from memory or hard copy, edit them and transmit them locally or globally, capturing the fax numbers from its own internal directory if required. Input can be from memory, by keyboard, by optional digitizer tablet, or from hard copy using a scanner or a fax machine.

Additionally, PC-FAX can capture and transmit drawings from a CAD system, with no limitation on size. Its Screen Grab facility allows a graphic screen to be 'grabbed' for conversion to a fax file and transmitted in binary form to any make of microcomputer.

By adding a companion low-cost digitizer tablet, the FAXWRITER, it allows a secretary or a user with little experience in using a PC to handwrite fax messages, draw diagrams and transmit them through the system.



Users who already have a fax machine can use it as a scanner to input hard copy directly into the system, and also as a printer.

Image quality on the new system is claimed as ten times better than with conventional fax-to-fax communication and the error rate is low. In Normal mode, resolution is 202 × 98 pixels: in Fine, 204 × 196 pixels. Transmission speed is 9600 Baud. Software is to International Group III CCITT standard, upgradable to Group IV.

The Softech PC-FAX also provides automatic dialling and redialling at variable preset intervals, allowing unattended transmission and reception at cheap tariff rates. It can also be set to poll other fax and communications systems to check if there are any fax messages programmed to be transmitted to its number.

Ever heard of a space hoover? CRL have!

Their space hoover called Thundercross is making a thorough job of sucking up the entire universe. Attempts to get closer to this vessel are being fought off by its surrounding alien defence crafts. Only after shooting each alien attack to smithereens can you attempt to damage some of Thundercross's raised power points ultimately to render it powerless. If you yourself are to survive you must try to keep your slowly self-repairing shield as undamaged as possible.

The author of Thundercross is Jeff Lee, creator of 'The Rocky Horror Show', another CRL hit. With Thundercross he has written fast and furious action — there are 8 big space hoovers with unpredictable firing power to deal with in all, and 64 different alien attack waves of varying intensities and speed. CRL claim it's up to you to secure the safety of the universe!

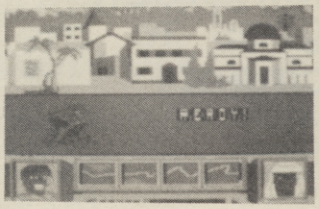
Thundercross is C64 £9.95 (c) £12.95 (d).

For further information please contact Simon Harvey-/Nadia Singh at Headlines PR on 01-837 6294/01-278 0333.

Beautiful Albatross. (Courtesy of C.B.M.) computers)

One of the best looking S.F. books about, Albatross is being brought out by a new S.F. publisher,IKTHOS. By Keith Duncan and with illustrations by Nico Gusman, the book is about Allie the Dreamer and Glyn a young technician who take on the evil might of a terrifying adversary. Ikthos tells us the text of the book was keyed on a Plus/4. The disks were then converted to be read by a PET and the editing carried out on a 8096/-8050 twin drive PET system. Beautifully designed at £3.95 with full colour illustrations, Albatross looks to be one of the best value books of the year and probably unique in the machines on which it was produced. A review of Albatross will appear in March C.C.I. but so impressed were we that we have been in contact with the publishers and hope to run a competition with the original artwork as a prize.

Contact: Albatross, £3.95. IKTHOS Publishing, 3 Enterprise Way, Solter St. LONDON WD1D 6KG. Tel: 01 960 5385.



Tour de Force

Gremlin moves strongly into 88

Gremlin have some hot new titles headed your way early in 1988. Apart from the already announced Alternative Games, which at last does something original with the idea of multiple games, they also have Tour de Force, Blood Valley, Venom Strikes back and Northstar. Their games are all for the C64 but Gremlin have not like so many other companies deserted the faltering C16 market and plan to release Tube Runner for the C16 shortly.

Mumps — no, it's not another Amiga virus,

it's a Programming language for developing a database.

MUMPS (which stands for Massachusetts General Hospital Utility Multi-Programming System) is one of the four programming languages officially recognised by the American National Standards Institute.

MUMPS is useful for creating tailored databases, because it is highly flexible, easy to learn and can network easily. It is now available for micros.

Now MGlobal has released versions of MUMPS for IBM and compatibles, plus many other MS-DOS machines. MGlobal calls this editon the CCSM. It costs £149 plus VAT.

Details: 01-568 2621.

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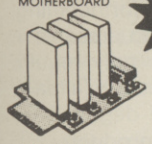

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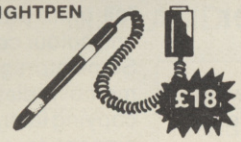

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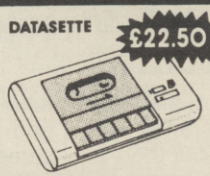

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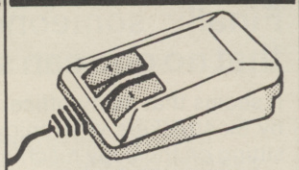

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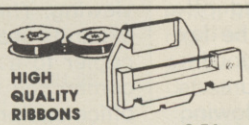

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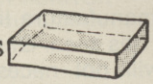

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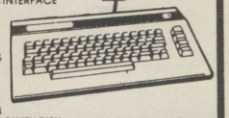

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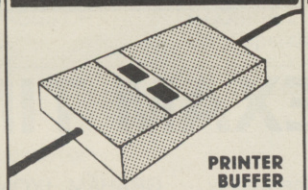

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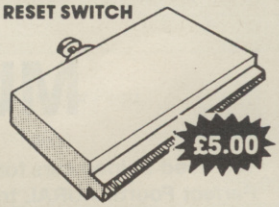

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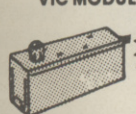

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Electronic Copy Boards

Finally someone has invented an office copier that no one can sit on . .

It seems that many offices are plagued by ex-streakers who enjoy pranks like sitting on the copy machine, but there's a solution — electronic copy boards. These boards, which are easel-sized or blackboard-sized, are designed for copying notes and graphics during business meetings. But because the object to be copied must pass between the scanner and the board (a very narro space), perhaps they can solve two common office problems at once!

New A/V Device

Electronic copy boards were introduced to the U.S. market in late 1985. According to a 98-page research report from International Resource Development Inc., they have made their way into the conference rooms of most major corporations. In the period of time with which they have been on the market, they have caught on quite well — and have proven to be frequently used devices during all types of business meetings, says the report. The copy boards save time in advanced preparation of materials for last-minute meetings, eliminate note-taking, preserve important drawings and ideas, and double as a projector screen.

Electronic copy boards are manufactured by the same set of vendors as facsimile equipment — and the underlying technology is the same. In general, the market for copy boards is expected to become just as competitive as the fax market is. The distribution patterns, purchase patterns, and the average unit price will parallel those for fax. In addition, there is little product differentiation among first-generation units. All these indicators point to a market that will experience the same high degree of competition, with the continued off-shore manufacture likely, that the fax market has seen. One vendor's dominance will not necessarily ensure its same level of participation the following year. And feature additions and cost-cutting will be necessary requirements to remaining on top in the market.

Because of the broad similarity to the facsimile market, one can examine some of the developments in those products to get a glimpse of what second-generation copy boards may look like. For instance, the addition of such features as plain-paper copying (all units presently use thermal paper) and colour copying may be forthcoming. Some storage capability, to preserve in memory diagrams which may require copying later, is a similar feature (already present to a very limited degree in at least one manufacturer's product).

But probably most importantly, communicating copy boards — with the ability for one copy board to talk to another, or to facsimile equipment, or other types of office equipment — are also looming on the horizon. Copy boards may move in and replace much of the audio-graphics conferencing market, says the IRD report. Some units may even become a peripheral to the PC, so that data graphics and database retrievals can be performed for audience viewing. The copy board of today will expand out of its present role as a simple copier to a unit which is used in full conference mode with other types of office equipment.

Further details on the $1,850,00 report (#706), entitled ELECTRONIC COPY BOARDS — LOCAL & REMOTE, including a free table of contents and description, are available from IRD at 6 Prowitt Street, Norwalk, CT 06855 U.S.A.; Telephone (203) 866-7800.

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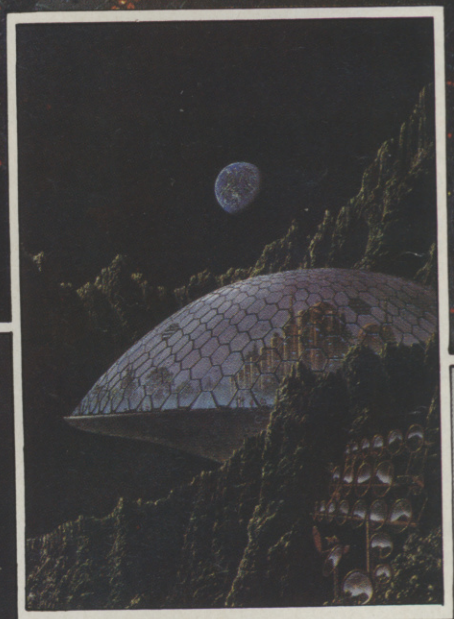
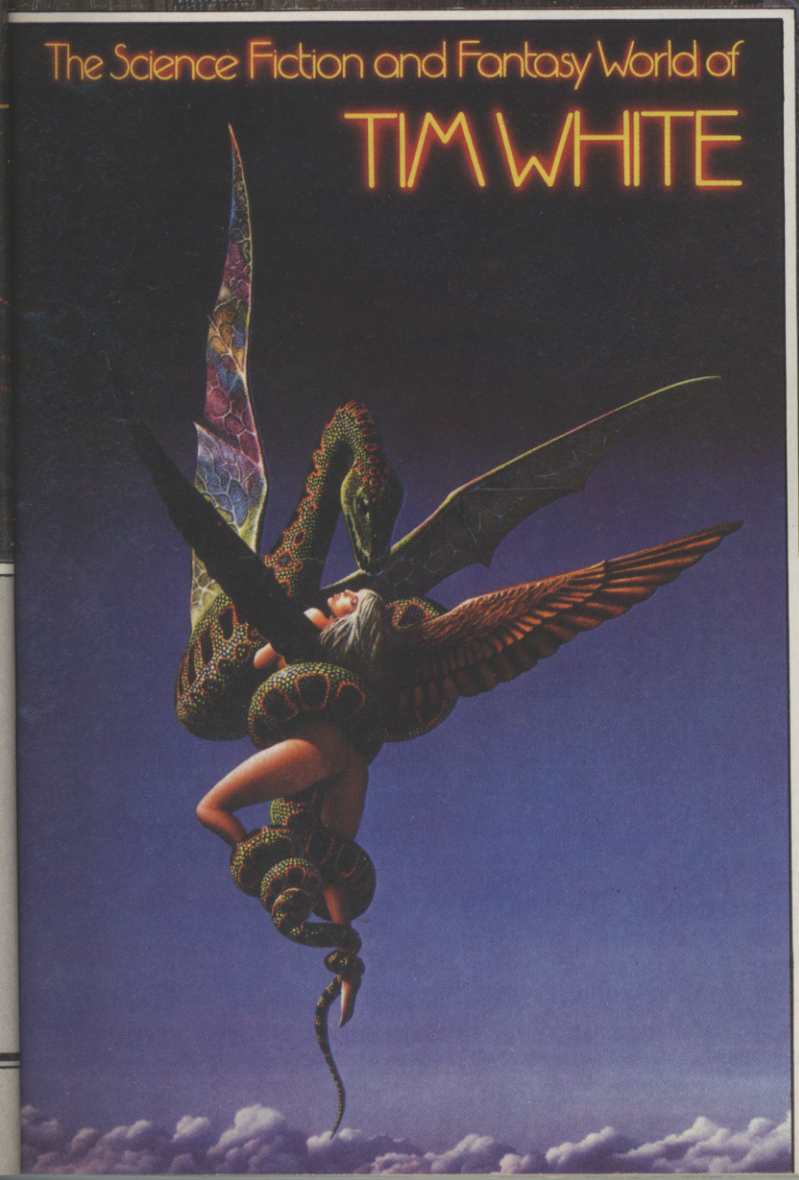




TIM WHITE is one of the outstanding illustrators of our time. He makes most computer game packages illustrations look crude. His work depicts the landscapes of the far limits of the imagination and is often used in Science Fiction and Fantasy. It includes magazine illustrations and record sleeves. A book of his work — *The Science Fiction and Fantasy World of Tim White* — is published by New English Library (ISBN: 0450 0444 0) at £10.95. Ask for it for your next birthday, it is absolutely stunning — as you can see from the taste of the pictures we give you here.

THE 64 EMULATOR

It must be a good bet that virtually no-one who comes into the possession of an Amiga will not have used, or more likely owned, a computer before. The highest probability is that there will be hundreds of thousands, even millions eventually, who upgrade from the world's best selling computer — the 64 — to what will almost certainly be the home computer of the 1990's. But when Judgement Day comes one of the most heinous sins that computer manufacturers will be charged with will be "incompatibility".

You may be, or have been, a Commodore owner but even if you were one those millions who bought the 64 and used it lovingly for years, once you buy your Amiga all the software you acquired is condemned to the trashcan — or the classified ads. Until now that is.

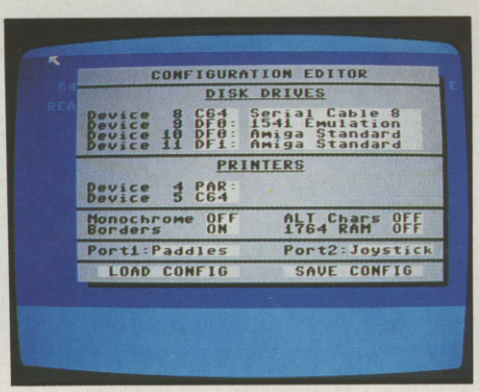
For Readysoft has come up with what Commodore should really have been prepared to provide to every shortly-to-become-ex-64 owner — an emulator.

Readysoft's "The 64 Emulator" for the Amiga is a high technical achievement. It is no mean task to carry out the necessary actions to make a 68000 machine of 512K think it is a 6502 computer with a tiny 64K. Of course an emulator the other way would have been an even greater achievement and would not be welcomed by CBM . . . An emulator is going to be an absolute boon to those people who have loads of serious software like spreadsheets and especially stacks of data on 5¼in disks in 64 format which they want to be able to access from their Amigas.

"The first thing you notice about The Emulator is the speed — or rather lack of it"

The 64 Emulator is simple to load, just like any other program on the Amiga. You boot it up and lo and behold, there on your Amiga screen are the distinctive two shades of blue so instantly recognisable as the 64.

You need first of course to have connected your 1541 drive by means of the interface cable supplied with The Emulator into the printer port of the Amiga. The Amiga must indeed be a clever beastie to be able to take instructions from that port which is really for sending them out!



The first thing you notice about The Emulator is the speed — or rather lack of it. Most of the programs seem to run substantially slower — that is unless you are using productivity software such as Timeworks Swiftcalc which we tested and found appeared to run exactly as on the 64. However, when we ran disks of games we had in the office, anything that had fast movement or quickshooting was reduced to an absurdly drawn out action time that made them look like the slowing of a film when the projection equipment breaks down. So most 64 games are simply not going to be worth playing. Interestingly, though, Readysoft warns that protection on 64 programs may prove an obstacle we found no difficulty with any, even the heaviest, except perhaps Defender of the Crown, and Cinemaware have always been known for there special attention to that.

Many people will welcome the ability that the Emulator provides of accessing already existing data. If for example you have been carrying

"It has the excellent advantage of allowing you to put the data straight into an Amiga file"

out calculations or keeping accounts on your 64, then the Emulator will quite happily let you use them on your Amiga.

It has the excellent advantage of allowing you to put the data straight into an Amiga file, providing you save the data onto an Amiga disk first in Amiga format which,it will let you do with no trouble. You might have some small difficulty with the need to flip manually some characters from "Commodore ASCII" to "real" ASCII but this is easily accomplished.

Of course not all games are disqualified by the Emulator's lack of speed. Text adventures present no problems and it handles pure graphics fast and confidently. Graphics packages like Blazing Paddles which we tested ran perfectly. Though why anyone should want to run 64 graphics on the Amiga heavens knows! Though,of course,you should remember that you cannot transfer graphics from the 64 to the Amiga because although such a transfer will work for text, ASCII is common to both machines, the graphics formats are entirely different.

If you are a straight shoot 'em up games player with little interest in anything else then The Emulator is not for you. If you are intending to use BASIC programs you may have written or constantly use, then it will be a considerable asset to your Amiga computing. For under £50 The Emulator is excellent value for the saving of effort and convenience it provides.

Contact: Readysoft, P.O. Box 1222, Lewisham, N.Y. 14092.

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GEOS 128

Berkeley Softwares Inc

The C128 has not been too well supported for dedicated software since it was first introduced nearly three years ago, but now the situation has taken a big turn for the better. There has been a flood of new products that have arrived from the States in particular. The 128 it seems at long last is about to come of age. It's funny how this should be after the Amiga is now Commodore's top dog, but as a 128 owner I'm glad to see that now I have a growing selection of games and serious software dedicated to my beloved machine.

The most important piece of software to arrive from the States is the 128 version of the GEOS operating system. This is available through Financial Systems Software who are one of the importers of these new 128 items. There are some very important improvements on the latest version such as 40/80 column modes, faster loading etc.

For those of you that are still in the dark and aren't familiar with WIMP operating systems, GEOS 128 simulates the Macintosh or Amiga style Windows Icon Menus and Pointing graphic screens. That means you access menus and sub menus using an input device to move a little pointer around the screen, with which, just a click is all you need to perform one of the tasks on each menu.

As with all operating systems there is always a set up sequence which allows you to get set up for your particular hardware configuration. That is to say which disk drive or drives (this version is so up to date it even includes allowance for the new 1581 3½" drives), which printer and interface or which input device such as a mouse or joystick. When you have changed all the different items to suit — GEOS will auto boot to your configuration every time.

The opening screen from the system disk has neat layout just as the 64 version but there are some changes such as switching between 40/80 column modes etc. The disk directory displayed is shown on the screen as an icon for each file. If there is more than one page of these icons to view it's a simple job of clicking the input device when it's on the "dog ear" corner of the sheet revealing another page of files. A back-up system disk is supplied with the package along with the applications disk (more about that I will describe later).

When using the operating system, file manipulation could not be easier. There are quick and easy methods to copy, rename, print and delete files. Formatting, renaming, copying or validating a disk is so simple. Ease of use is what GEOS brings to your computer housekeeping chores. Now for the real goodies that come bundled on the applications disk.

geoPaint

Dip your mouse into the paint and splash your screen with a rainbow coloured masterpiece of electronic pixel wizardry! Well that's what I would like to think I could do, except my house is well stocked with art critics that give no praise. However there is much fun to be had with geoPaint. Like other GEOS windows the drawing window displays only a portion of the whole document. This lets you work in fine detail and to give an even greater resolution there is the pixel edit mode. Here you are in complete control over the smallest areas in the document. If, because you are only shown a portion of the document, you wish to see an overall view of the masterpiece there is a preview command to show a compressed version of a complete page so you can keep an eye on the whole perspective of things. Working in colour is only possible in 40 column mode. Henry Ford says 80 columns are just as good. I agree as one printed results are so much sharper when a hard copy is just what you need.

When working on your creation there are very many graphic aids at your disposal to enable you easily to produce quite good results early on. With so many types of brushes, shapes, spray patterns, fill patterns, cut and paste commands, rotate image, circle, ellipse, square, oblongs (I could go on...) that you'll find it simple to produce professional looking charts and diagrams or pictures. There is the ability to drop in text from the fonts out of geoWrite to add captions or notations to help your illustrations.

The text is as easy to manipulate and position as you would expect. I will tell you more about geoWrite in a moment. All the very many type styles and sizes are possible to be incorporated into your work. Images produced are saved automatically and there is an album file to keep them in for easy access. When needed these files or pics can be retrieved to be used in geoWrite documents.

geoWrite

I suppose that word processing at its easiest is just about the right description for this neat 40/80 column processor. To create a document from geoWrite there are quite a few nice typefaces to choose from. Six fonts with changes for each to bold, outline, italics, underline or plain text plus different type sizes lets you put a great deal of variety into your manuscript.

The screen shows only a portion of the page that you are working on if in 40 column mode, as with geoPaint, but it is just as easy to view other parts of the screen as before, again you can get a preview of the whole page in a compressed form. IF you are like me and prefer a WYSIWYG (that's... What You See Is What You Get... for the uninitiated) then this is a GEM! I have used many other word processors. Some of which cost more than the whole GEOS package and of which you'd expect to find a lot more in the way of formatters, page headers and footers, different fonts etc. and all which makes this seem just a little limited in its scope. It is however most important to put it in the right perspective, if value for money is the criteria then this geoWrite is second to none!

CONTINUED ON PAGE 107...

Sysres

Andy Eskelson tests a 64 Toolkit and finds some interesting commands.

Sysres is the name given by Hands On Software Inc., to their BASIC programmers toolkit. Sysres is designed for use with the CBM 64 and offers a range of facilities that make the production and debugging of BASIC programs very easy. There are a claimed 1100 new functions added to basic, but as this includes all the variations of each command it is perhaps better to know that there are 33 command words and 11 DOS support commands.

Sysres is provided on a single 5.25 inch disk with a **very well produced manual.** Each of the commands is fully documented and an example is given. The care that has been put into the documentation says a lot about the overall quality of the program, it is a very complex piece of coding that presents the user with a very easy to use interface to many commands and also provides a nice DOS-driver.

The commands have everything that you would expect from a toolkit and it is apparent that Sysres has a long history and has been upgraded since the days of the PET. (there is even the odd mention of the PET.)

Some of the commands are modified versions of the normal BASIC keywords, for example LOAD defaults to disk instead of tape. Sysres offers many commands to the user but some commands have been added that makes life very easy (not to mention lazy). One that is a delight is the / and ^ the sequence to use these commands would be: @$ (list the directory) cursor up the list to the program that you want. OVERTYPE the file size numbers with a / or a ^ and the program will load or load and run. Very easy, and another point is that Sysres will ignore the file size completely, so even if 145 was overtyped to become ^ 45 the 45 does NOT effect the operation at all the file still loads. There is a problem with the @C and @D commands, the @D is useless to you if you have the 1541, it is designed for the dual drives and the command is not included in the command documents. Likewise the @C command CAN copy between drives, so a little care is needed in use. However if you use a dual drive such as the 4040 and some sort of IEEE interface, these two commands are of full use to you.

The commands that you get are:

Append	Auto	Bload	Brun	Change	Close	CMD
Delete	Dump	Exec	Find	Get	Key	Keys
Kill	Kill *	List	Load	Merge	Mon	Old
Put	Renumber	Run	Save	Setd	Setp	Trace
Verify	Why	Why?	*	#		

The DOS support gives:

@C (copy)	@L (list)	@S (scratch)
@$ (directory)	@N (format disk)	@I (initialize)
@D (duplicate disk)	@R (rename)	@U (reset drive)
/ (load file)	^ (load and run file)	

As you would expect the Find and Change commands are very comprehensive, in fact they allow many forms of wild-card matching and they do take a bit of getting used to, but they still work in the time honored fashion of Change/A$/B$/ which will change all occurrences of A$ into B$, so the commands are usable from the moment you load Sysres without the hassle of learning a totally new syntax.

"They will even go as far as to try to link into any other command that is resident in the memory that they use."

All these commands must be in memory somewhere, they are tucked away under the BASIC ROM's thus they don't use any of the memory allocated to BASIC. They will even go as far as to try to link into any other command that is resident in the memory that they use. So if you have a machine code monitor in memory, Sysres will try to live with it rather than overwrite it. Provided on the Sysres disk are a few versions of Xmon, a monitor that will work with Sysres perfectly.

The major use of any toolkit is in debugging programs, the Trace and Why commands are used for this. The Trace is fairly standard, its speed can be controlled paused or stepped. Another function is that the variables can be traced at the same time, so you can see exactly what each variable has assigned to it, VERY useful. Early toolkits had a HELP command that would show where an error was, but sometimes this could be confused. If a function caused the error then it would be the line that CALLED the function that would be displayed as the error. The same is true for the WHY command, but if you see no errors in the line then you can use the WHY? this will show the line that was being executed at the time of the error. Again this is a very powerful tool for the programmer.

CONTINUED ON PAGE 107

Midnite Assembly System

Len Keighley burns the Midnite Assembler oil for potential programmers.

There are a number of Assembly level programming packages on the market but this new version must rank as one of the most comprehensive and versatile. The Midnite Assembly System was written by Matthew Montchalin and is produced by Mountain Wizardry Software of the United States. At present it is only available in CBM 64 mode but a C128 version will be available soon.

The Midnite Assembly System is written in one hundred percent machine code and is completely independent of the C64 Basic. So the C64 Basic ROM can be removed and replaced by an Eprom of the user's own design. The package comes with an extensive full screen editor which again is independent of the C64 Basic and has an up or down vertical scrolling feature. It allows free format input for source code with the ability to structure output for listings. An auto line numbering facility with the flexibility for free movement of lines is also supported.

The assembly of a program is carried out by a two pass approach. The first pass generates a symbol table and the second generates the actual code. All files created or updated by the system are annotated with the month, day and year. The package also contains a DOS Wedge for file and disk manipulation. Hexadecimal, Binary and Decimal operands may be used.

The package has two interesting features which allow for easier use. The first is the flexibility in assigning names to Symbolic Labels, as well as being up to one hundred bytes long they may be further identified by use of colour (up to 16), upper and lower case and alpha, numeric or graphical characters. The use of colour can provide a very useful tool when writing programs i.e. all error labels could be in red and all input fields in green. The second feature revolves around the use of 'Pseudo Ops' which are directives to the assembler, for example, to redirect assembler output or evaluate expressions and assign them to symbolic labels.

A further feature of the Midnite Assembly System provides for the calling of external routines either in immediate mode or during program assembly. This then allows the user to compile a library of useful routines that are known to work and that can be included in any new program.

The documentation supplied is quite extensive and the package contains a forty two page manual. This includes a memory map of the assembly program and the structure of source files. In addition Mountain Wizardry Software are also happy to reply to written queries.

If you have not yet purchased an assembler package and are contemplating doing so, the Midnite Assembly System should be considered, as it will provide a solid base for introduction to this lower level or programming.

GEOS Manuals

Over the years whenever a new type of utility or professional software is released, that is seen as having a major impact on the computer world, books and manuals on the subject are soon to follow. Berkeley Software's Graphic Environment Operating System (GEOS) is no exception to this. Two books, or Textware, have appeared on the shelf at almost the same time. These are 'How to get the most out of GEOS' written by M. Tornsdorf and R. Kerkloh and is published by Midnite Press and 'GEOS Inside and Out' written by Jim Oldfield and Tim Sickbert and is published by Abacus.

Both books cover the same areas of the subject. An introduction for beginners followed by more detail which can be used as and when required.

'How to get the most out of GEOS'

This book starts with a chapter on the first session using GEOS which is intended for someone who has never used GEOS before. This is followed by a section containing extensive chapters explaining the major components of GEOS, Desktop, Geowrite and Geopaint. Included in these chapters are undocumented features which may be useful to the committed GEOS user. The next section consists of a number of software routines for the conversion of wordprocessor text files from Easyscript, Speedscript, Pocket (Paperback) Writer, Paperclip and Wordpro to GEOS format. Both the source code and machine language routines are provided. Once the text has been imported all the features of GEOS are available to manipulate the text. Other routines in this section include those for importing graphics files from Doodle, Flexidraw or the Koala Pad packages into Geopaint format. Also formatting and reformatting routines are given to ease the transfer of GEOS files via communications links. Finally, a routine is provided to unscratch files that have been placed in the waste basket but have not yet been fully deleted. Section three of the book contains details of the formats of the GEOS files, a GEOS Disk map and memory map of GEOS itself. The book is completed by a series of appendicies containing, in addition to the usual index and bibliography, a list of known errors and problems with GEOS and how these may be avoided or corrected.

'Inside and Out'

The format of this book is initially the same as the previous book. After the introduction the second chapter is for beginners and the third contains detailed explanations of each of the GEOS features, Desktop, Geowrite and Geopaint. The fourth chapter entitled 'GEOS Applications' illustrates the uses that GEOS facilities can be put to in producing professional diagrams, graphs, charts and plans. Chapter five consists of two main items, the Tricks and Tips that can be used with each GEOS feature and the FILEMASTER and

CONTINUED ON PAGE 107

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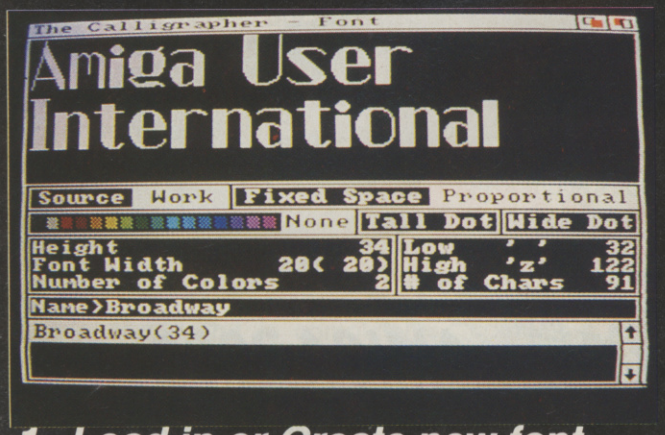
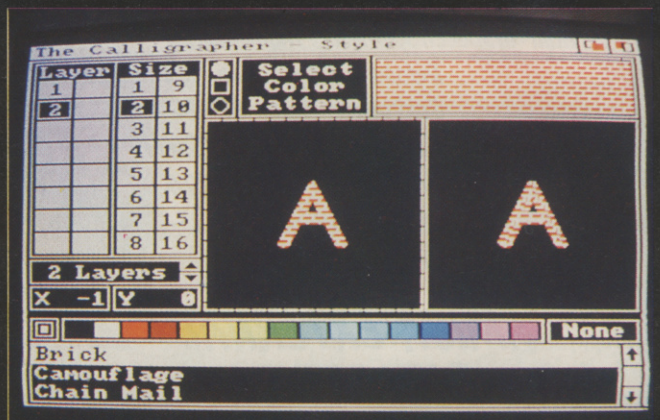
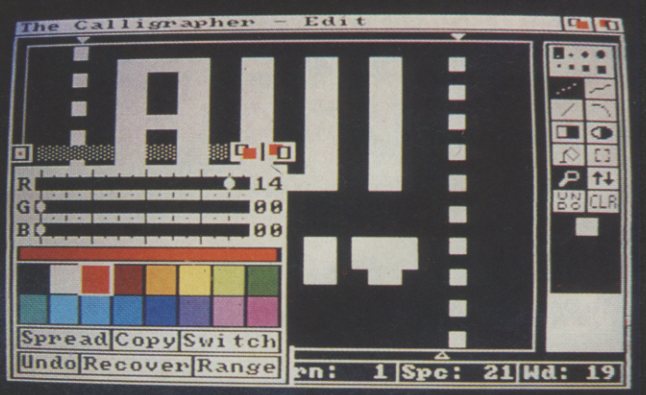


1. Load in or Create new font



2. Create style and colour font



3. Edit individual characters

Until recently only single colour text fonts were available for the Amiga. This was a great shame as the Amiga is capable of some amazing COLOUR graphics. It you needed coloured text you had to use a paint program and manually colour each character. There are now, however, several software houses producing programs that utilise colour fonts (rumour has it that the new Workbench 1.3 will include a colour font facility). The major difficulty in working with fonts especially colour fonts is ensuring that all the characters share the same attributes.

"Calligrapher's outstanding quality is the ease with which you can try different ideas, see them on the screen, modify them and change a whole alphabet in just a single keystroke"

Calligrapher will allow you to modify old fonts or create new ones with up to 16 colours and any size from 1 x 1 pixel to 160 x 256 pixels. Calligrapher's outstanding quality is the ease with which you can try different ideas, see them on the screen, modify them and change a whole alphabet in just a single keystroke. Fonts can be outlined, patterned, italicised, resized, merged, have shadows added and more. There are six different screens through which all these effects can be achieved.

FONT SCREEN — Used to load and save fonts. It also includes a facility that enables you to view text in the font you have created.

SELECT SCREEN — This is where you decide which characters your font will comprise of on which some of the specialist effects will apply.

EDIT SCREEN — Here characters can be edited. Most of the usual drawing facilities are available such as: Draw freehand, lines, circles, ellipsis, boxes, zoom. Most of these are very similar to DPaint in operation.

EFFECTS SCREEN — Fonts can be resized, their spacing adjusted, they can be slanted to varying degrees, underlining added and colour palette changed.

STYLE SCREEN — Many special effects can be created here. A style is made up from 1 to 16 layers all placed one on top of the other. Each layer can be individually patterned, coloured or enlarged. By offsetting them in relation to one another it is possible to give the appearance of shadows, outlines etc. etc.

RAPHER

Interactive Softworks

4. Change the size, slant or spacing

5. View or select characters

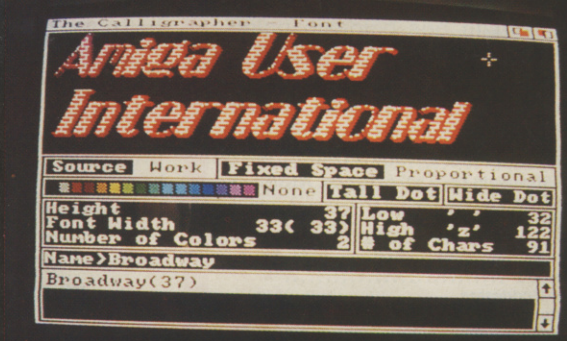
"All the styles of lettering that Calligrapher allows can be incorporated into any of the other graphic or font-using packages"

***PATTERN SCREENS** — Allows images produced with other packages to be imported and used as patterns with which to 'paint' the fonts.*

All the styles of lettering that Calligrapher allows can be incorporated into any of the other graphics or font-using packages.

At first gith Calligrapher seems a little complicated but after a couple of times past the walk through examples it soon falls into place. Most commands are available via either the mouse or keyboard. A very useful reference card is included.

For anyone involved in presentations or videos, the possibilities that packagers like Calligrapher offer are exceptionally exciting and provide another convincing argument for the usefulness of the Amiga.



6. Test your new font

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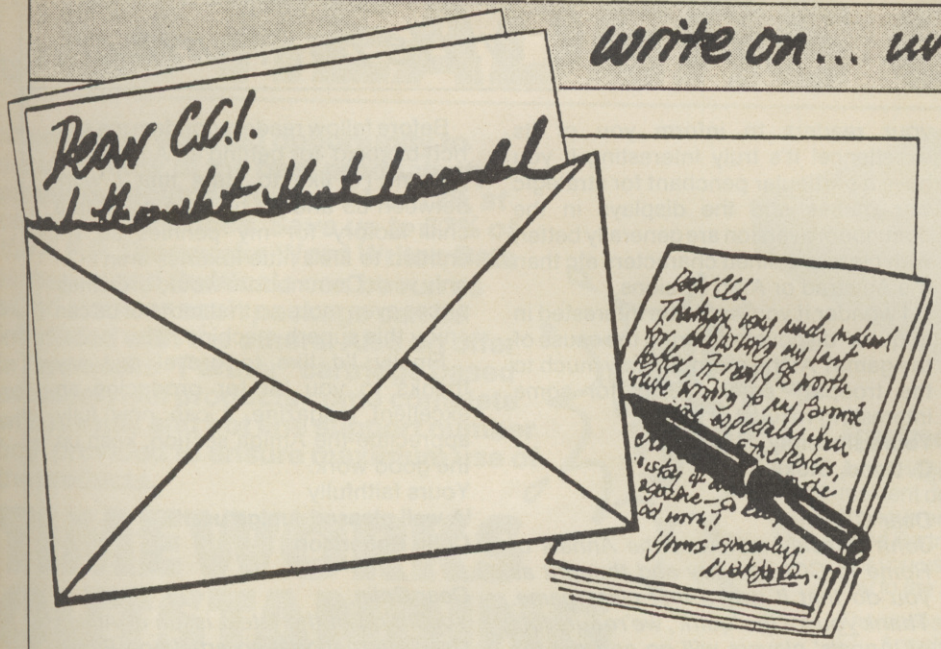

Dear CCI
This is a direct plea to software houses on behalf of the many thousands of frustrated C16/+4 owners in the UK; Here we have two fine micro's (the C16 being the best 16K machine ever) slowly going the way of the beloved VIC, DRAGON, ORIC, TEXAS etc... etc because more advanced machines have become available, in this case the AMIGA and ST-the game makers feel that with these machines available no-one will be interested in "low tech" machines anymore. That is rubbish, just because these Mega-machines are out doesn't mean we all want one. When we have perfectly good machines as it is —all we want is decent software and most of us will buy it. What I mean is produce 64K games more of the time. This would breath new life sales wise because people will want to buy 64K rampacks for their C16's and +4 owners won't want to buy other micros when they are at last getting full usage out of their micros. Please take heed because it could boost flagging C16/+4 game sales considerably.
Damon Shaw
P.S. I am a worried +4 owner.
P.P.S. Are sales that low not to warrant a C16/+4 top 10?
P.P.P.S Please print this letter, because it looks like certain doom for us it we don't get heard.

Dear Damon,
It's not a question of 'Low Tech', it's whether someone — software companies — think they can make more money creating products for one machine or another. They don't care about technology but profits and they don't see them coming from Plus/4's. It's the stupid case of someone going into a shop asking for something and being told 'Sorry we don't stock it because there is no demand for it... 'CCI doesn't print a C16 chart now, not because we don't want to but because we can't get enough reliable information.

Dear CCI
In your November issue Dave from Ilseworth wrote to you about the VIC 20 he owns that is a cause of great embarrasment to him in front of his friends. My heart really went out to him. While I agree with your answer, ie. if an Amiga is well out of bounds then get a 64, you had replied to his question of an upgrade as an impossibility.

In fact your excellent magazine has in the past carried an advertisement from Evesham Micros for new 64 circuit boards at £45 each, I believe that they can be fitted in the VIC 20 shell and plugged into the existing keyboard if not for an extra £20 he could get a new Slimline case and out pose his friends for less than £65 into the bargain.

I suggest he contacts Evesham's for advice I write as someone who has no connection with Evesham Micro's other than as one of their very satisfied customers.
Yours Sincerely
C. Cotton

Ouch! This is getting painful admitting we're boobed again. Of course, one of our wonderous advertisers would have been able to solve the problem! Or rather one of our wonderous readers! Thanks for the advice.

Dear CCI
I have had this thought on my mind for quite a while now so I think I'll let you in on it, so this is it: I am now using cassette and I am planning in the near future to change to disk. So therefore I will use "The Expert" to transfer all my tapes to disk. After doing this my next plan is to save up for the "Star NL-10" dot matrix printer and to put a bit towards it I would sell my old original tapes (which I know is not illegal). But this would then leave me with a load of disks that would look totally "PIRATED" which they are not, but would have no proof against that fact. What can I do?

And to add to the confusion I am leaving the country and should they search me they would find "COPIED DISKS", would they do anything? If so what? What can I do about it?
HELP!!
Yours Sincerely
Rodrigo Araya, Bristol

Dear Rodrigo,
It is not in any way illegal to copy your casettes to disk. It is, however, illegal to sell copies. But not to sell second hand your old cassettes. As it is not illegal to make copies — i.e. back ups for your own use, no action could be taken against you even if you were leaving the country with them. But don't make two backups and sell the second!

Dear CCI
In your January edition Graeme Kidd was saying something about the anti-social nature of computers in those homes where there is only one TV. This reminded me of a Kenny Everett show on TV where Kenny had evolved a zany TV helmet which completely cut him off from the reality around him. It was a hilarious sketch but it started me to thinking what a marvellous thing such a helmet would be to create the perfect environment for the ultimate in simulations.

Inside the helmet, in front of the eyes could be two screens giving 170 degree peripheral and perfect 3D vision. Built in speakers would also give stero sound. Just imagine the effect of, say, a rollercoaster ride, helecopter or aircraft flight, underwater exploration and all the simulation games like golf, basketball, anything at all. Wow!

Being disabled and unable to take part in any of these things in reality I think I would speak for everyone in my situation when I say that the closer computers can take us to the reality of the simulated experience, the better.

'Course, maybe its just a crazy idea — but maybe not. What do your inventively inclined boffins think?
Jack McKillop, Glasgow

Dear Jack,
Believe it or not, we saw that Kenny Everett show and that helmet. We thought it a great idea and wondered how close to reality it was. So we called up the people who made the show and tried to find out is such a device actually existed. Unfortunately no-one could tell us if it did. Howéver there have already been a couple of things that have pointed toward that Sf-like development. Some time ago someone came up with a control device you stood on for a ski effect. We think it was wait for it! — the original Amiga team! And we know that one aircraft simulation company, not for games but an organization that creates the million pound jobs for training

pilots, is looking at all round environment simulations in which the public — individual members of it — can sit and get the feel of "real" experiemces. And you might look at what Jeff Minter thinks is the future of home computers too. That could be almost as good. . .

Dear CCI
While sorting through my computer junk box, I came across a joystick suffering from Decathlonitus (a now common complaint in joysticks). In other words it was totally defunct (broken in other words). Rather than throw it away, I decided to use the cable from the joystick to build an arcade-style control box, using large buttons (about an inch in diameter) mounted in a sloping box. Not only are the buttons as robust as microswitches, they are also easy to hit. Also, if one breaks, it is an easy job to replace the broken switch, as they only cost about 80p each. The total cost? About £5 using a joystick cable or about £8 using a home-made cable. The parts for this are easily available, and it really stands up to the punishment dished out in some games. I have produced a sheet giving full construction details and a source of parts, so if anyone would like one, could you please sen an SAE to the address shown.
Andrew Parker, Cheshire
P.S. Since this letter will probably reach you before Christmas, I hope all at CCI have a happy christmas. If it doesn't, I hope you all had a happy christmas! Keep up the excellent work.

Dear Andrew
Your control box idea sounds great and very creative too. We're printing your address for anyone who wants to 'button up' the joystick scene. And I think we did have a happy Christmas.

5 Ainsdale Close, Penketh, Warrington, Cheshire WA5 2DN

Dear CCI
Can you please help me? I am looking for a publication listing all the software that has been released for the CBM 64, listing such things as date released, type of loader used whether it was a fast load game and a description about the game.
Yours faithfully
Robert Cockin

Dear Robert
Unfortunately, there is no such publication. But if you try the big distributors such as Centresoft, Unit 2, Holford Way, Birmingham B6 7AX, they might help you with a catalogue.

Dear CCI
Having played the excellent strategy game, "Annals of Rome", on the Commodore 64, I had to write to yourselves and your readers to inform you of its excellence! It's truly interesting if you have a particular penchant for strategic war games and the displays in the commodore version are generally better, with clearer defined characters etc than the Amstrad or Atari versions.

I wonder if you would be interested in a "quirk" discovered during the cause of the game? At the prompt "How much to the troops?" enter "2021" for some interesting results!
Yours sincerely
C. Bond, Stoke

Dear C. Bond
John Ransley reviewed the Annals of Rome in CCI January and thought as you do that it was a first class game. Thank you for the 'quirk', we're sure lots of 'Annals' players will go and get the interesting result.

Dear CCI
A few months ago discount vouchers were sent to me for the Amiga 500.

Unfortunately I was unable to use the vouchers and I am still interested in buying an A500 and monitor, though it's a pity about the high price.

My hopes were raised when I read in another computer magazine (shame on me) that Commodore were in the near future starting another discount scheme for the A500, is this true? The magazine was by the way Your Computer (November 1987 issue)
P.S. Some computer magazines used to be excellent a few years ago yet now they grown old and moved over to being a more dedicated magazine or more business like but yours is still excellent!
Yours sincerely
Chi Kwong Chu, Newcastle

Dear Chi Kwong Chu
Pity about the vouchers . . . But if you read the ads in CCI and Amiga User, you will see that lots of dealers have reduced the Amiga 500 prices. The lowest we've come across — so far — is £375.00!

Dear CCI
First off I would like to publicly thank my wife for the Amiga she bought me for my birthday on 12 November. It proves that subtle hints do work, so don't just sit there lads (and lasses) dreaming — start dropping a few hints!

My thanks also go to Turtlesoft of Grantham for their speedy service. The Amiga arrived at 6 in the evening without the modulator and after a phone call it arrived by post the next day, talk about a quick service. By the way lads, the Amiga will hook up to the 1701 (and give a colour picture) via the video out on the modulator.

A quick question, what is Public Domain software and where can I get it?

Before fellow readers condem me as a 'rich bxxtxxd' for getting an Amiga as a present I'd like to state that I work between 55 and 60 hours a week in a chilli factory for my pennies so I'm entitled to life's little luxuries aren't I? I only wish Commodore would drop their prices even more so that more of us can enjoy this superb machine.

Finally I'd like to grovel and say thanks to you lot for producing an excellent magazine, I can now fully appreciate the Amiga section, keep up the good work.
Yours faithfully
'A well pleased Amiga user'
Colin Robertson

Dear Colin,
You'll find in the latest issue of Amiga User International an article on Public Domain software, the first of a series. It should give you all the information you need. Lots of not-yet-Amiga users will enjoy you a so generous wife. But what about some generous husbands buying their wives A500's

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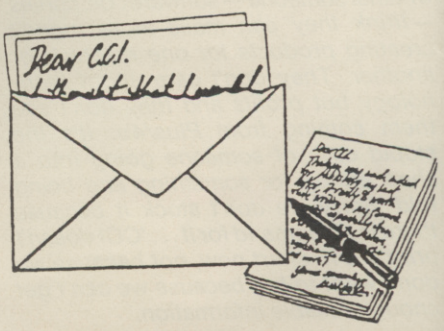
READERS LETTERS
We have had a stupid letter, unsigned except 'a 500 + 64 user'. It complains of 'piracy starting at the software houses' because he had written to software 'companys' and had no reply. The anonymous idiot — apart from not being able to spell — also threatens not to buy any more games but spread ripped off copies around, claiming it is the software 'companys' neglect of the Amiga that has turned him into a pirate. He then goes on to 'bet we have no guts to publish this letter' and has apparently taken bets on it.

Now we are not so imbecilic as to be conned that way by an illiterate who has not the guts himself to sign his name, or give an address. As for piracy they used to make pirates walk the plank. Pity they don't any more. We can think of one letter writer we'd happily watch teetering over shark-infested waters. Go buy a dictionary, Thickie. You are the kind of computer user that gives garbage a bad name.



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write on... write on... write on... write on... write on...

Dear CCI,
What a wonderful offer Commodore have just given Commodore computer owners and C.C.I. readers, up to £250 of an Amiga A500 system, unfortunatley it only lasted for such a short length of time.

How many people cannot at the present time afford to purchase this wonderful new computer, but would dearly love to do so. I hope within the next 12 months to own an Amiga, but willl I have to pay full price without a discount?

Over two years ago, I purchased a Plus 4, but before doing so, I contacted Commodore U.K. and asked them for information about their new machine. I was told that it was a good all round computer and that many software companies were in the process of producing software for it, and that it would be well supported by software manufacturers. They sent me numerous brochures and I purchased the Plus 4. I was conned, as were many other Plus 4 owners. A few weeks after the purchase the Plus 4 was being sold for £79.00. The Plus 4 is now finished and we are lumbered, or are we?

Would it not be an excellent public relations exercise for Commodore U.K. to give an 'Open Ended' discount to people like myself. Many companies jumped on the computer broom bandwagon and failed. Commodore had their problems and fortunately overcome them. So it would be really nice for Commodore to show an out of good faith and give Plus 4 owners a special clame. How about a little assistance and pressure from yourselves your the only magazine who has assisted us in the past, publish this letter, I'm sure it will be read by the 'High up's' at Commodore and will receive support from other Plus 4 users.
Thanking you in anticipation
K. Todd

A very interesting idea. We are passing it on to Commodore for consideration. It would probably help a lot of people — Plus 4 owners — make up their minds to buy Amigas.

Dear CCI

My problem is one of compatibility and I am writing to ask if any other Commodore users have met with the same problem.

Having purchased a 1570 disk drive to accompany my Commodore 128 I was doing fine until I decided I would like to use Music Studio and found that it had been written beyond the 35 tracks allowed on my 1570. So I shrugged and persevered thinking that I could obtain some other music program.

Unfortunately it did not end there as I then desired Cholo by Firebird and found I had the same problem. Now I have obtained The Sentinel and find that that to is write protected beyond 35 tracks.

I am getting most upset. I had come to terms with the shortage of 128 programs and accepted 64/128 as a poor substitute. Now I find I am being deprived yet again. Countless telephone calls to Commodore and Firebird have left me with a very high telephone bill and nothing to show for it. The consensus being that not many people have complained and that I would have to live with the problem.

Come on all you Commodore users. Tell me its not just my problem. Perhaps if we can get together on this future programs will not be elusive.
Thanks for paying attention,
Jennie Mitchell,
Wardens Flat
Knightstone Place
High Street Worle
Weston Super Mare Avon BS22 0JT

Anyone care to contact Jennie and provide a solution (if there is one!)

Dear CCI,
Enclosed is a photocopy from your April Issue contaiing a program I was keen to experiment with.

I'm not sure if this was some sort of practical joke, or a colossal error as it not only doesn't work but never could have even come close to working.

To say I am thoroughly pissed off over this is putting it mildly. I had to go to no end of trouble to get the blasted magazine (which costs over $5 here), then do your job (?) by checking the listing for errors, and finally I'm having to write this letter.

If a corrected listing exists I would appreciate you sending it to me, or alternatively you could give me Lee A. Brown's address. I'm enclosing $1 towards the postage. (Please don't reply via your magazine as it would be over six months before it reaches here.)

Do you actually just toss this kind of thing into the magazine without even checking it???
Yours faithfully
Kirk McMillan, New Zealand

Dear Kirk,
We are sending you a correct listing of the program you had trouble with from April C.C.I. but we are not going to apologize because it is the ***same one we printed in the magazine.*** *It runs perfectly! We are prepared to bet you ten more New Zealand dollars that it does work.*

Partly from the fact that not another C.C.I. reader complained — worldwide! Secndly because we have re-checked it and surprise surprise it still works!

We do not actually toss this sort of thing into the magazine but we do feel like tossing your letter into the waste-bin, but you did send a dollar . . . we though we would send it back to you to go towards a new set of spectacles — which might spare you from making a spectacle of yourself.

However, in future we think that a charity for the blind might be more deserving.

Dear CCI,
You may be interested to know that in my opinion CCI has improved tremendously since I took up my annual subscription just under a year ago. Alternatively it may be that I have become slightly more knowledgeable in computer terms or perhaps a bit of both. Either way it's down to CCI.

However, I do have a beef which I hope that you will do something about and it's this:

As an annual subscriber why must I suffer the humiliation each month of seeing "CCI" on the shelf at my local newsagents two weeks before I get my copy? I do look forward to it and sometimes cannot resist the temptation of peeping before my own copy arrives which spoils it to a point and in any case it's a bloody draughtly shop and I prefer to do my reading sitting down at home. Should I place an order with the newsagent or renew my subscription when it becomes due shorlty.

O.K. I know it's worth waiting for (if that's what you were going to say) but can't the distributors get their finger out, as it happens every month.

Whilst I am on I must say that I found the statistics from Evesham most interesting as I note that sales of Amiga now equal sales of Plus 4 (9%) and I wonder what the marketing boys have to say about that. As a Plus 4 owner (and a very happy one) I feel that it was a mistake on CBM's part to abandon the Plus 4 since it has in my view a market sector of it's own now: e.g. either end of the age groups who would otherwise not have a computer at all unless it was bought for them or they won the pools

Finally I would like to endorse the above review which is a very fair assessment of an excellent facility.

Thanks again for a super monthly, even some of the daft letters give us a good laugh.
Best wishes
George Barker

Dear George,
We have looked into the mailing of subscribers copies and found that occasionally these have been delayed. However our policy is to mail at least three days before CCI should appear in the shops, which is immediately we receive it. We can't ensure for the post office after that though! We suspect the Commodore using postmen take it home for a free read! We agree with you about the Plus 4 — one day computer historians will look back and say CBM blew that one!

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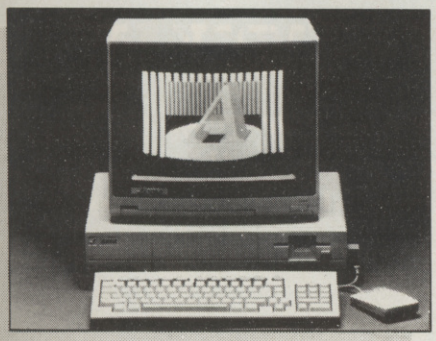

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- **SUPER COMPACTOR.** Ultra efficient program compaction techniques. Each program saved as a single file. 3 programs per disk side – 6 programs per disk, if you use both sides.
- **TEXT MODIFY.** Change title screens, high score screens etc. Put your own name into a game then restart it or make a backup to tape or disk. Very simple to use.
- **MONITOR.** Full feature 'Floating' type MACHINE CODE MONITOR. All standard features plus many more:- assemble, disassemble, hex dump, interpret, transfer, compare, fill, hunt, number conversion, bank switching, relocate, load/save etc. Uses no memory. Full printer support.
- **DISK MONITOR.** A special monitor for use on the RAM inside your disk drive. All the usual commands – a useful hacking tool.
- **WHOLE DISK COPY.** Copy a full unprotected disk in under two minutes with only one drive.
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- **REDEFINED FUNCTION KEYS.** Single stroke commands for operation of many common commands including: LOAD, SAVE, DIR. Load from directory – no need to type in filename.
- **TAPE TURBO.** Designed to make turbo load/save for your own programs. No screen blanking during loading.

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Disk includes **GRAPHIC SLIDESHOW** for displaying pictures saved with **ACTION REPLAY.** Plus Warp 25, Superboot – non Action Replay owners can speed up their 'expert' or 'freeze machine' programs to see what they have been missing.

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ACTION REPLAY

Professional Mk. IV

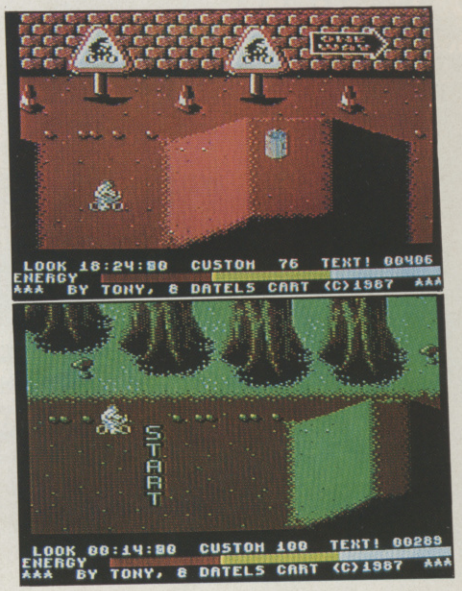
Datel

Whilst most claims made by cartridge manufacturers are genuine, one place they often slip up is in the naming of them. For example, I have with me as I write an advert for The Final Cartridge III which has possibly the most illogical name of any computer add-on. Considering there have been two previous final cartridges! That is rivalled by another of Datel's products, Action Replay, which claims to be the *ultimate* backup cartridge. The thing is, the mark III version was billed in exactly the same way and as no-doubt the two before were. Of course, it is always good and natural to upgrade products and Datel offers you an upgrade from your previous Action Replay for £19.99.

The main reason a lot of people will be interested in the cartridge is for making backups. Its facilities for backups are more or less the same as the mk. III version. Any (almost) single-load program can be saved to tape or disk. Before loading, the memory can be configured to give maximum efficiency, although this can be detected by some programs. Multi-loads can only be transferred from tape to disk and this is on the condition that they use the Novaload system. A choice of two turbo saves on cassette, and three speeds on disk are available.

Ther is a handy monitor built in for anyone wanting a peek at the program code. It is all in the ROM of the cartridge, so the whole RAM can be examined. The monitor is extremely easy to use, and supports functions such as assemble, display A, X and Y registers, fill memory, hunt, compare, transfer, go and number conversion. It employs the standard screen edit system and is simple to get to grips with. In fact, when I was testing it out, I came up with my first ever infinite lives poke after a surprisingly short time. Very rewarding!

Probably the most appealing aspect of the cartridge is its ability to



display frames of sprite animation. Selecting view sprites from the main menu enters a simple screen in which sprite images can be examined through four possible banks. The sprite mode can be toggled from hi-res to multi-colour, and each colour can be modified for the best effect (although this doesn't affect their colour in the program, of course). Each sprite frame can be wiped, mirrored, or saved (or loaded) singly. Using the load/save option, games could be customised, but I would imagine this would be a long process. This part doesn't have much practical use, but is great fun to use.

A very unreliable "sprite killer" is included, but only works on very few games, and I don't think it is as good as might be expected.

Hi-res screens can be saved to tape or disk, and then loaded into one of many graphics utilities (Blazing Paddles, Koala, Advanced Art Studio, Artist 64, Vidcom and Image System). A series of screens can be saved on tape, and using the tape slideshow option from the menu, can be loaded and displayed in sequence. Screens can also be output to a printer.

The final graphics related function is the text modifier. I can't think of anyrealreas nwhy this shouldn't be used merely for a bit of fun. The user types in the text to be altered, followed by the amended text, and any of the chosen text the program encounters will be changed to your choice. This may seem rather pointless, but is fun nonetheless. You can give your friends a surprise by putting your name into the creators of a preferred game.

For anyone wanting to enter pokes without using the cart's reset switch, there's a special feature. Select pokes and you'll be prompted for the two values. This can serve as a short cut for lazy game pokers, or provide a quick way for entering your own pokes without having to find the SYS value.

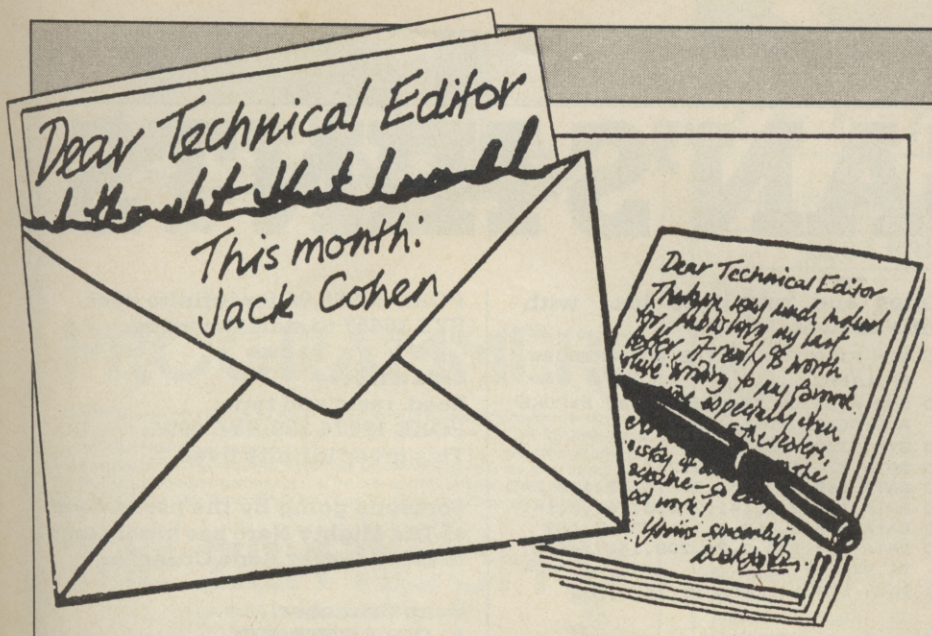
Finally, under the utilities menu, you'll find the tape slideshow and Novaload to disk transfer mentioned earlier, and some disk utilities. These are: disk format, a high speed disk formatter, file copier which can make several copies from one file, and a routine to copy an entire unprotected disk.

The Mark IV Professional Action Replay does not appear to differ much from the Mark III, but is a great deal easier to use due to the revised menu system. Most selections are made by single key presses where ever possible, and sections such as the monitor and sprite viewing screen are well designed.

At £34.99, it could eat a hole in anyone's wallet, but if you like a bit of a snoop around, or are afraid of losing precious data by a careless cup of coffee, an inquisitive cat, or a probing chair leg, Action Replay has to be well worth a close look. My advice is to check out the competition, find out which best suits your finances and needs and go for that. Whatever the outcome, Action Replay IV is bound to be very high on your list.

T.H.

Price: £34.99



Dear Technical Editor
Reading your November issue, I came across PET/64 combination with appropriate commands.

I want a 64 to read 1541 formatted disks on a 8250 dual drive (using IEEE). Does it work. The drive is double density, double sided with DOS 2C.

This would be OK instead of transferring files.

Also, which book can guide in such and similiar problems. Could I get a copy of May 87 tips.

Jörn Loe, Norway

P.S. Maybe there is also a possibility that I can use the 8250 drive with an Amiga 500. How should I connect them to work?

1541 formatted disks can not be read by any computer on 8250 format since the formats are incompatible.

The best way is to transfer all your programs from 1541 to 8250 using a free program known as copy/all by Jim Butterfield.

This is available to ICPUG members free (see our advert elswhere in this issue).

Equipment required:— a 64, 1541, 8250 and a suitable IEEE interface such as that supplied by BRAINBOXES of Liverpool (051-220-2500).

Plug in the 1541. The interface goes into the cartridge port and a PET to IEEE cable fixes on the end of the interface. The other end of the cable is attached to the 8250 but do not switch on the 8250 yet. First switch on the 1541 and load a suitable device changer program. (see Jan 88 answers for a very short routine). The load copy/all which when run will ask which disk progs you want transferred. Just follow the instructions and remember that the 8250 holds just over SIX times as much as the 1541.

Rae West's book "Programming the 64" has a good section on disk drives. May 87 back issues are still available from CCI.

There are ways of using an 8250 with the Amiga but they all require extra hardware and are not worthwhile unless you have lots of data you need to transfer.

Dear Technical Editor
I have recently purchased a second hand CBM 1526 printer, though the test print out shows it to be an MPS802 rev, 07B.

The lack of descenders on the lower case gs and qs have prompted me to write to you for help. In the February 1986 issue of Commodore on page 69 there was a program for descenders on the MPS-801. I have tried this with my MPS802 with no joy.

I now hope you can help a loyal reader by suggesting the best reasonably priced solution available to me. Also the best buy in word processor software with built in spell checker for my particular printer would be appreciated.

Thanking you in anticipation.

B.J. Coleman, Dudley

Regarding the 1526(MPS802) see my replies in Feb 88 and the current issue. 'Paperback Writer' has a spelling checker as an optional extra which will work with your printer.

I am not certain as to whether it is available in the UK. Try the advertisers in CCI for information.

Dear Technical Editor
I own a C16+4 which is about 2 years old, for a while I was quite disappointed for none of my game cassettes would load.

Through reading your magazine I found that the tape heads had slipped, for this I thank you.

I now have a new problem. The joystick Port (2) refuses to work! Could you please advise.

If this repairable, preferably by me as money is short. Is it possible to reroute (via the monitor) so games written for port (2) can run on port (1).

Although I have had my Plus 4 for so long, I am just learning to program, could you please print a list of books on both basic and machine code programming for the plus 4!

I have found, as did W.G. Maughan (Oct issue) games and information etc a bit sparse for our machines.

In answer to his question, the difference between C16/+4 and C64 is I believe that C64 is version 2.0 Basic and C16+4 is 3.5 basic (it would seem ours is better for programming). I do feel that Commodore have let us down and, in my limited knowledge of the subject, being as how the Plus 4 has a 64K memory, we are short of quality (scrub that) complex games available to C64 users.

Although I am 35 I find the language as confusing as my wife's knitting.

S.K. Roche, W. Yorkshire

Most good professionally produced games are written in machine code and therefore it would require a lot of work to disassemble these progs and find and alter the joystick routines to port 1.

Basic games can be altered fairly easily.

The fault is probably in one of the I/O chips unless you have physically damaged the joystick port (by rough insertion etc). The chips are usually fairly expensive and the labour cost may not be much more than the chip so I suggest that you obtain a quote from one of our repair advertisers for the job.

If you are not experienced in electronics and soldering then there is a danger of you damaging the chip as well.

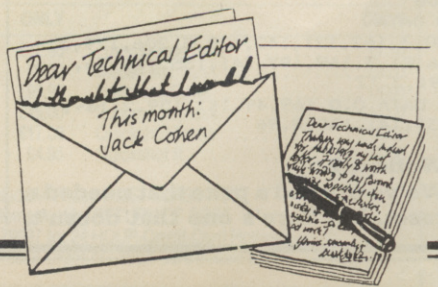
Dear Technical Editor
I have recently been given a SERIAL (manufacturers name) 8056 compact printer, I would like to connect this to my C64 via my serial interface which I use for my EPSON DX100, is this possible? And if so any ideas on how to reconnect the cable shown below in the printer cable layout.

Nigel Foster, Northants

I have made many enquiries but cannot trace a printer manufacturer of the name given by you.

Are you certain that the label SERIAL is one referring to the type of printer. If you can look inside the printer at the bottom of the case for the original manufacturers name and write and let me know.

If any reader knows what make an 8056 printer is then please write with the manufacturers name and address.



HORGAN'S HINTS

This month's £10, T-shirt and subscription go to Philippe Burgess for a routine to speed up Enduro Racer. R Troughton also deserves special thanks for his contributions. I'd be especially interested in a routine to speed up Matchday II, and any more off-beat pokes will receive special attention.

C64

Enduro Racer:
The following listings are all from Philippe Burgess of Australia.

This gives you the choice of a faster game, infinite time, or both.

```
10 REM
20 SYS 65371
30 FOR A=53203 TO 53255:READ B:
   POKE A,B:NEXT
40 PRINT CHR$(5) "ENDURO RACER
   CHEATS BY PHILIPPE"
50 PRINT "1=EXTRA SPEED  2=INFINITE
   TIME"
60 PRINT "3=BOTH"
70 INPUT "PRESS 1, 2 OR 3";C
80 IF C=1 THEN GOSUB 160
90 IF C=2 THEN GOSUB 170
100 IF C=3 THEN GOSUB 160:GOSUB 170
110 PRINT "CHEATS OK? Y/N"
120 GET K$:IF K$="Y" THEN 150
130 IF K$="N" THEN RUN
140 GOTO 120
150 SYS 53214
160 POKE 53244,0:RETURN
170 POKE 53249,165:RETURN
180 DATA 169,49,141,159,2,169,234,
    141
190 DATA 160,2,96,169,211,141,40,3
200 DATA 169,207,141,41,3,32,4,247
210 DATA 32,108,245,169,251,141,
    233,2
220 DATA 169,207,141,234,2,76,81,3
230 DATA 169,16,141,118,48,169,198,
    141
240 DATA 183,40,76,251,207
```

The Last Ninja:
Enter and run this listing before loading the game with infinite lives.

```
3 FOR I=579 TO 640:READ A:POKE I,
A:C=C+A:NEXT I
4 FOR I=317 TO 31735:READ A:POKE I,
A:C=C+A:NEXT I:IF C=8876 THEN SYS
579
5 PRINT "ERROR IN DATA"
6 DATA
198,157,78,41,3,169,0,162,1,168,32,
186,255,32,189,255,32,213,255,120,
136
7 DATA 140,21,3,169,128,141,237,2,
238,119,244,238,169,166,141,20,3,
108
8 DATA
20,3,162,121,142,178,3,206,179,3,
76,81,3,169,197,141,135,120,76,
191,3,12
9 DATA 0,0,169,49,141,159,2,169,
234,141,160,2,96
```

Wonder Boy:
We've printed a poke that needed a reset, but here's one that doesn't. Enter and run it to load with infinite lives.

```
10 REM FIDDLING BY THE WONDER BOY
   PHILIPPE.
20 FOR A=53209 TO 53255:READ B:POKE
   A,B:NEXT
30 SYS 53209
40 DATA 32,44,247,169,233
50 DATA 169,207,141,206,3,32,108,245
60 DATA 169,208,141,205,3,169,3,141
70 DATA 206,3,169,0,141,233,2,169
80 DATA 141,234,2,76,208,141,144,8,
   76,243
90 DATA 176,141,116,10,76,0,208
```

Slap Fight:
Run this and load the game for infinite lives.

```
3 FOR I=512 TO 533:READ A:POKE I,
  A:C=C+A:NEXT I
4 FOR I=820 TO 827:READ A:POKE I,
  A:C=C+A:NEXT I:IF C=4042
  THEN SYS 512
5 PRINT "CHEATS BY PHILIPPE"
6 DATA
198,157,169,0,162,1,168,32,186,255,
32,32,189,255,32,213,255,169,141,199
7 DATA 3.96.169.44.141.255.39,76,
207,3
```

Thanks again to R Troughton for this load of pokes.

720
This listing, when entered and run gives infinite time.

```
100 DATA 32,104,225,169,16
110 DATA 141,56,8,169,6,141
120 DATA 57,8,76,16,8,169,29
130 DATA 141,42,1,169,6,141
140 DATA 43,1,76,0,1,169,42
150 DATA 141,224,4,169,6,141
160 DATA 225,4,76,0,4,169
170 DATA 173,141,28,29,141
180 DATA 89,31,141,243,32
190 DATA 141,19,34,141,216
200 DATA 21,141,113,32,76,80
210 DATA 8,0,0,0,0,207,207,1
220 DATA 120,169,56,141,20,3
230 DATA 169,207,141,21,3,88
240 DATA 96
250 PRINT CHR$ (147)
260 POKE 53280,0:POKE 53281,0
270 FOR L=1536 TO 1600:READ A
280 POKE L,A:NEXT:POKE 157,128
290 SYS 1536
300 REM (C) ROBERT TROUGHTON
```

Ancipital:
I never liked this, but according to Mr Troughton, it's a classic. Either way, this infinite lives listing should jolly it up a bit.

```
100 DATA 32,104,225,169,97,141,243,
3,169,1,141,244,3,76
110 DATA 13,8,169,173,141,247,72,
76,0,64
120 DATA FOR L=337 TO 360:READ A:
POKE L,A:NEXT
130 POKE 157,128:SYS 337
```

Boulderdash:
Load, reset and type:
POKE 29004,96 for immunity to fireflies and butterflies
POKE 29885,96 for infinite time
POKE 35589,96 for infinite lives
SYS 36457 to start the game

Sidewize:
Load, reset and type:
POKE 12174,189:SYS 4096
This gives infinite lives.

Someone going by the pseudonym of The Mighty Nero has kindly sent these codes for Bone Cruncher.

Bone Cruncher:
1 - GOLEMSTENCH
5 - SCARAB
6 - WEB OF DEATH
9 - UNDERGROUND
10 - DEATHCHAMBER
11 - GOLEMS CAVE
12 - HORNSLUT
13 - SLIMEHOLE
14 - BLOODSMELL
15 - BONEPOWDER
16 - NIGHTMARE
17 - MONSTERBREED
18 - THUNDERSTORM
19 - CREEPY CAVE
20 - LIQUIDATION
21 - MEGAHAZE
22 - STRATA GEM

J Clover of Southampton has informed me of the following tip.

International Karate +:
Hold down 'X' and '1' for a turbo charged duff up session.

Another native of Southampton, J Cole has kindly provided this listing for Nebulus.

Nebulus:

```
10 FOR T=0 TO 29
20 READ A:POKE 560+T,A:NEXT
30 DATA 169,1,170,168,32.186.255,
    69,0,32,189,255,32,213,255
40 DATA 162,2,189,75,2,157,209,3,
   136,16,247,96,76,102,254
```

Run this, and when the "READY" prompt appears, type SYS 560 and wait for the game to load. When it's loaded, the screen will clear for you to type:

```
POKE 46729,0  (for infinite time)
POKE 32980,234:POKE 32979,234
(for infinite lives)
SYS 32768  starts the game.
```

C16

Here are a few more from Philippe Burgess.

Sqij:
Enter the monitor and type:
1929 60
X
RUN

CONTINUED ON PAGE 101

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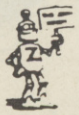

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Telemap Launches Modem Package

Telemap, the company which operates the on-line micro-computing service Micronet, is launching its own modem package with the aim of making its on-line services more accessible to the home and business micro user.

The Telemap Professional Package (ProPak) comprises of the Telemap ProPak modem — a BABT approved Hayes compatible intelligent modem supporting auto-dial, V21 and V23 protocols — machine specific software, connecting cables and a year's subscription to Micronet, Prestel and Telecom Gold.

At £199 + VAT (£218.95 – VAT is not chargeable on the subscription) for all versions (with a residential subscription), the ProPak represents a saving of up to £168 on recommended retail prices.

The ProPak will be available from February 1st 1988 for the following machines: IBM PCs and compatibles, Commodore Amiga and 64/128.

Telemap's Marketing Services manager, Lynne Thomas, commented, "With on-line services becoming increasingly vital to the serious computer user, we realised that a single purchase package was needed to replace the existing assortment of incompatible modems, cables, communications software and services. The Telemap ProPak is that complete solution."

Telemap's Lynne Thomas happy with Micronet's new Modem.

Telemap Ltd is an EMAP, British Telecom and BCE Publitech Inc. (wholly owned subsidiary of Bell Canada Enterprises Inc.) company. Telemap's main product, Micronet, was launched in March 1983.

Micronet is based on British Telecom's Prestel network and currently consists of around 35,000 pages of information, including daily computer news, software and hardware reviews, hints and tips and other features. There are also a wide variety of interactive services, such as Telesoftware, Electronic Mail, Telex, Celebrity interviews, Chatlines, Multi-User Games, a gateway to Telecom Gold (Interlink) and technical support for home and business machines.

With over 20,000 subscribers, Telemap's Micronet is the largest information provider on Prestel.

ICPUG

This month some more about us and the things we do for computer users. We produce our user group news letter, and maintain public domain libraries for all commodore computers past and present. We also appoint technical help advisers (again their services are provided free to members). We act as a pressure group on behalf of our members and indirectly all CBM users.

The group is still growing rapidly and the membership in measures in thousands, but this does not restrict our services.

We are a non profit making group with limited liability for our members under the Cooperative rules.

Members give their services free of charge to help the groups activities and the membership comes from all classes whether from home, business small, medium or large, education and science, disabled groups, Public bodies whether local authorities, hospitals or government departments.

They come from the armed forces on land, sea and air and from all over the world.

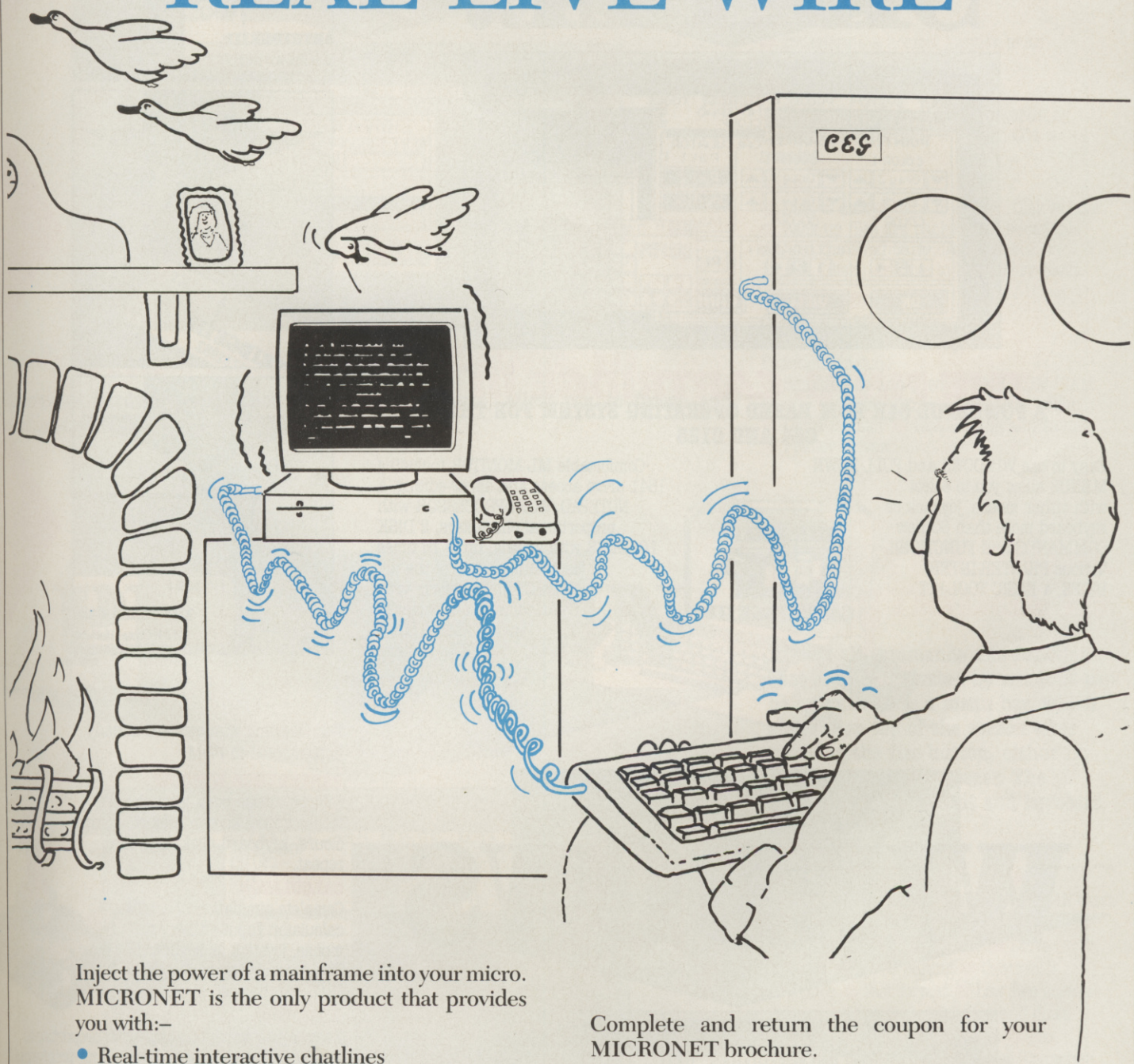
In fact with the rapid growth in computer usage, just about everyone has a member in our group who represents their interests in a general way.

All members are encouraged to join in the running of the group and all contributions of knowhow are welcome.

Do come and join us and you will find our regular advert elsewhere in this issue.

Jack Cohen Manager of ICPUG and also Membership Secretary.

COME HOME TO A REAL LIVE WIRE



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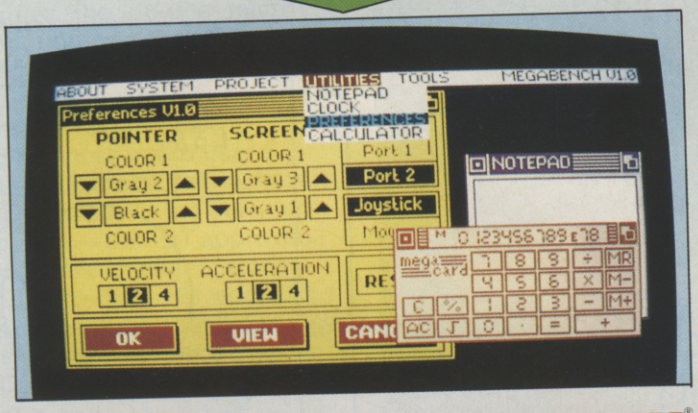

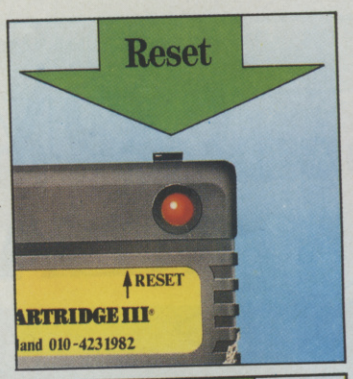

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A POWERFUL 64K ROM BASED OPERATING SYSTEM FOR THE C64 AND C128

Easy to use WINDOWS and PULL DOWN MENUS allow you to select with either mouse, joystick or keyboard more than 60 new COMMANDS and FUNCTIONS. Various PRINTER-INTERFACES, a BASIC TOOL-KIT

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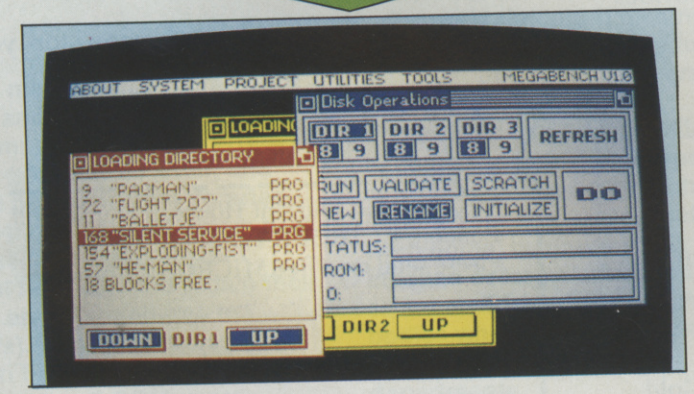
WINDOWS



THE FINAL CARTRIDGE III®

The high-resolution bit mapped windows are selected from a menu bar. An unlimited number of windows can be open on the screen at the time. The windows can be freely moved on the screen.

The following windows are already implemented in ROM:

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Selects: mouse port, joystick port, mouse speed, screen colours, pointer clours, keyboard click, keyboard repeat.

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Complete simulation of a LCD-calculator. Input either with mouse, joystick or keyboard. The numeric key-pad of the C128 can be used in C64-mode.

NOTE PAD
Easy to use wordprocessor with proportional characters enables you to store and print small notes, letters, etc.

DIRECTORY WINDOWS
Enables you to open directories from different disks and drives, sort and print directories.

DISK WINDOWS
Load, Run, Rename, Validate, Scratch, Initialize. Fast format disks.

TAPE WINDOW
Activates fast and normal modes.

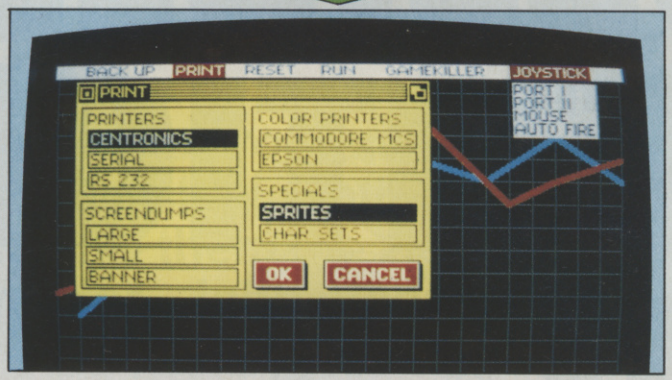
PRINTER WINDOWS
Select different printers, such as Commodore serial, Centronics, RS 232, Colour printers.

REQUESTER WINDOWS

DISC BASED USER WINDOWS

CLOCK
Real Time Clock, with Alarm.

FREEZER MENU



THE FINAL CARTRIDGE III®

Innovative hardware, combined with smart software, allow you to freeze and continue every well-known C64-program.

Freezer options include:

CENTRONICS/SERIAL/RS 232 SCREENDUMPS

● Full A4 printing ● Variable printsize ● Colour printing ● Sprite printing ● Reverse printing ● Colour changes.

GAMEKILLER

● Kills sprite to sprite ● and/or sprite to background collision ● Can be started at any point in your game.

AUTO FIRE

● Transforms a normal joystick to an advanced auto fire engine.

JOYSTICK PORT CHANGER

● Never blow up your computer again by changing joystick ports while the C64 is running.

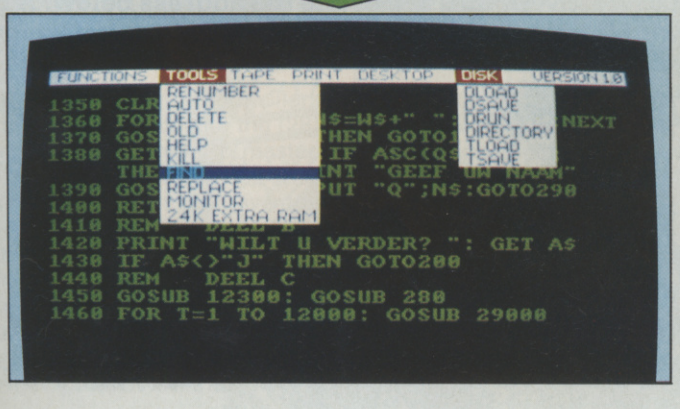
BACK UPS

● Disk to disk ● Tape to disk ● Disk to tape ● Back up files are packed and reloadable without the Final Cartridge III ● 60K in 15 sec. (disk) ● Exits to Monitor or Basic.

ML MONITOR

Comfortable ML monitor.
Does not reside in memory.
Functions include:
● Scrolling up and down ● 64K ROM/RAM access ● Sprite editor ● Character editor ● Drive monitor ● Fast loading and saving ● Printer driver.

PULL DOWN MENU



THE FINAL CARTRIDGE III®

Almost all commands and functions that are not activated by windows can be selected from a menu bar, which appears on top of the screen after pressing the fire button, either in Basic or from the freezer. The following Basic Toolkit and keyboard extra's are included:

● Renumber ● Auto ● Delete ● Old ● Help ● Kill ● Find ● Replace ● 24K extra RAM for Basic ● Append ● DAppend ● DSave ● DOS ● Monitor ● Drive monitor ● Sprite editing ● Centronics interface ● Fast format ● Low Res screen-dumps ● Plist ● Scrolling up and down ● Stops and continues listings ● Pro-grammed functionkeys ● Packer/Cruncher ● Hex to decimal conversion ● Pokes, syscalls and variables may all have Hexadecimal values ● Trace, Dump, Order, Mem.

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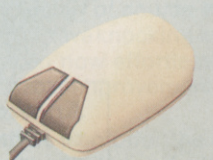


IMPOSSIBLE COMPETITION II

Win A Psion Organiser!

Another visitor, stay a while, stay forever! Destroy him my robots! Aaaaarrrrg! Ha ha ha ha ha! The spine-chilling words of the evil Elvin ring on in my head. I thought I'd never defeat that twisted egg-head of a professor.

No sooner had I set myself up in my newly acquired mansion, I received a call over my pocket phone. Elvin was attempting another catastrophic stunt, and I was the only man with a chance of stopping him. Remembering the help you gave me in my last mission, I ask you once again to come with me and attempt an Impossible Mission II.

Below is a brief intelligence test to make sure you're made of the right stuff. Pass this and you could get one of 25 computer simulations of the mission, and two very special agents will be equipped with a Psion Organiser hand-held computer each, just like the one I use. All you have to do is answer these questions and send the answers to the address below. A briefing on the mission can be found elsewhere in this issue.

1. What does the evil professor Elvin bend?
2. What was needed to enter Elvin's inner sanctum in our last adventure?
3. Name the last Epyx game to be rated by CCI as "awesome".

Answers on a postcard please by April 30th 1988
to Impossible Competition II, CCI, Bowling Green Lane, London EC1R 0NE.
The first 27 drawn out of the Competition Sack will get the prizes.

COMPILERS

Speeding Through Basic

If your Basic programs always seem to Run in slow motion, a compiler could give them the zip you've been pining for. John Ransley explains how compilers work and puts the best of them through their paces.

Do your self-penned arcade games suffer from slumbering sprites and tired, listless laser fire? Maybe your adventure programs take longer to respond than Directory Enquiries? Are dawdling databases or sleepy spreadsheets an irksome element of your business computing? Or perhaps you would like to develop a game for commercial exploitation but have a notion that software houses will not look at anything written in the language of the micro kindergarten?

Take heart, for the easy and relatively inexpensive answer to all your problems could be a compiler — simply the best utility you can buy if your expertise allows you to contrive fairly well-written programs in Basic and you want them to run at the speed of machine code creations without having to master its binary mysteries.

Happily, there are several compilers available for the 64 (and one for the 128) and all are relatively simple to master. Although claims that some will produce compiled versions running on average 30 times faster than their raw Basic counterparts can be a little exaggerated, there is no doubting that a compiler will produce an increase in program execution so marked that sometimes you might even have to introduce delay loops in the original to slow things down a bit!

Without diving too deep into the treackly sea of technicalities, some appreciation of how compilers work is necessary to evaluate the pros and cons of the different brands vying for your cash. Computers are most at home, and therefore operate at peak efficiency and speed, when their instructions arrive purely in the form of sets of 1s and 0s arranged as bytes — known as binary or machine code. Somewhat confusingly, such highly sophisticated input is known as a low level language.

For those happiest existing in the friendly and familiar environment of alphanumeric Basic, programming purely in binary is difficult beyond belief, and so even the most proficient professional programmers use a utility called an assembler. This allows them to use simple but significant abbreviations such as ADD, LDA or BEQ more easily to fill memory with all the values, conditions and other instructions needed to make a program run.

The end result can be saved and subsequently Run as a pure machine code program independent of the assembler used in its creation.

For most of us the easiest way of programming is through Basic — a high-level language — but execution speed is lost because your micro's built-in interpreter is compelled to study every declaration, statement and command in turn and then convert it into machine code. That process happens not just once but each and every time that the program is run.

"The compiler's job is to read each Basic line and convert it into pseudo-machine code (p-code), which is not quite real machine code but comes very close to it"

Using a compiler, however, you first write a conventional Basic program and then save it to tape or disk in the usual way. Next, you load the compiler into what will become a protected area of memory and follow the simple on-screen instructions that will appear. The Basic program for compilation should be ready in the datacassette or drive. The compiler will ask for the name of the original (or source program) and then load it into memory.

The compiler's job is to read each Basic line and convert it into pseudo-machine code (p-code), which is not quite real machine code but comes very close to it. When that process is finished, you can save the resulting p-code version (the object program) now existing in memory to tape or disk and subsequently reload it to run independently of the compiler as a stand-alone program.

You can also take an unlimited number of copies of the object program for back-up purposes, for friends, or even for sale. Again, those too will run without the compiler in memory.

"Most compilers also offer the option of adopting either integer or floating point arithmetic — usually by adding just a single declaration at the start of the source program"

Most compiled programs will, however, make use of something called a run-time library, to which the p-code version makes reference from time to time, so a copy of that mini-utility must usually be recorded on tape ahead of the program proper or carried on any disk used to store compiled versions — though some compilers incorporate it automatically in the object program. Either way, once in memory it will allow any number of compiled programs, whether loaded from tape or disk, to run correctly provided you do not subsequently warm or cold start your computer. In other words, you don't have to load the RTL every time you run a compilation. Because of the need to copy that utility, the original RTL on the tape or disk you buy is always left unprotected so that you may copy it as many times as you want.

The point to remember is that a 64 (or 128) dedicated compiler is capable of processing virtually any program written in Basic — including of course any old efforts you might have knocking around, to which you can now effortlessly add some considerable improvement in execution speed.

Most compilers also offer the option of adopting either integer or floating point arithmetic — usually by adding

CONTINUED...

COMPILERS

Speeding Through Basic

CONTINUED...

just a single declaration at the start of the source program. That is a lot faster than working through every program to identify those values that have to be awarded a % prefix. The integer option — which, again, can be used with virtually every program except those using complex arithmetical calculations requiring decimal values — will add considerably to program speed.

Most compilers will also accept and execute in the final, object program non-standard keywords such as those found in Simon's Basic. When one is encountered, control is momentarily returned to machine Basic, which searches around for the right instructions — which in this example would be held on Simon's ROM cartridge. It executes it and then returns control to the compiled program.

Similarly, you can easily incorporate as part of a compiled Basic program a favourite machine code routine that you've gleaned, say, from the pages of *CCI* or elsewhere.

So much for the theory. How do the different makes of compilers measure up and which of them represents the best value for money?

BASIC-64 COMPILER £34.99 disk only. First Publishing, Unit 20P, Horseshoe Road, Horseshoe Park, Pangbourne. Berkshire RG8 7SW. Phone 07357 5244.

THIS proved to be the most exasperating and disappointing of all the compilers under test. It worked without snags only in its most fundamental mode, when it did at least produce some useful speed improvements. In integer mode, however it constantly threw up error prompts — no fewer than nine times in the case of one test that all the other compilers coasted through without difficulty. With the adventure program, all seemed to go well during compilation but an OUT OF DATA prompt appeared soon after play started with the object program.

Basic-64 is also supposed to offer compilations straight into real machine code as opposed to p-code, but that option seemed to work only with the tiny test program supplied, and even then the improvement in speed over Basic was minimal; 22 seconds instead of 24.

Jetpack 64 (aka DTL Basic 64), £29.95 disk, £14.95 tape. Dataview Wordcraft, Radix House, East Street, Colchester, Essex CO1 2XB. Phone 0206 869414.

THIS writer must admit to some bias here, in that this was the first compiler I ever bought, and after some three years of use in any applications, it has never given me cause to reassess my initial favourable impression of its capabilities. Jetpack is very easy to set up and use whether you are tackling just a couple of common or garden compilations or something much more complex. If the latter, you can exploit Jetpack's extensive facilities for program tuning and customisation, including a special integer mode, chaining with or without shared variables, and a very fast garbage collection routine.

Games writers will particularly appreciate Jetpack's provision of a special command code, which if added to a line of the original program will really soup up the speed of any and all sprites used.

In common with the other compilers tested, Jetpack (whether itself on tape or disk) will accept a program held on either tape or disk and save the compiled version on either tape or disk too. One point to watch though is that the tape version of Jetpack can handle source programs of up to only 12K at a time —though by making use of the chaining facility, that should not prove much of a drawback in practice as longer originals can simply be chopped up into chunks each a little under 12K.

Blitz! £14.95 disk only. Supersoft, Winchester House, Canning Road, Wealdstone, Middlesex HA3 7SJ. Phone 01-861 1166.

IN common with all compilers, Blitz! offers a saving on memory in the case of programs originally larger than 20K and allows the user to monitor the compilation process by courtesy of an on-screen printout showing the number or numbers of any Basic lines containing bugs or at least any syntax that the compiler does not recognise. Oddly, the special modes for automatic run-time library incorporation, batching and chaining are available only to users having two disk drives. That disadvantage will inevitably restrict its appeal to many.

Stack Blitz! £4.99 disk only. Originally supplied by Meedmore Distribution, 28 Farriers Way Industrial Estate, Netherton, Merseyside L30 4XL. Phone 051 521 2202.

IF you want a no-nonsense, no-frills compiler that works perfectly and which is by the same author as the Supersoft product but at one-third its price, then this must be the one for you. Stack produced some excellent products for the VIC and 64 in their time and their compiler is often to be found 'remaindered' at a bargain price in High Street shops hidden among those sad little stacks of word processors and spreadsheets for the Lynx and Enterprise!

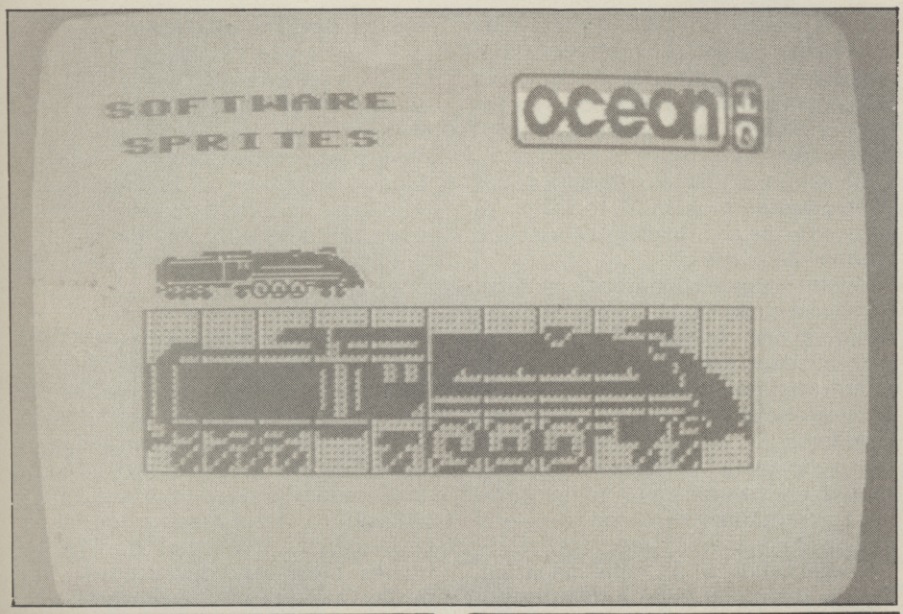
Petspeed 64/128 £49.95 disk only. Commodore UK, Gardner Road, Maidenhead, Berkshire SL6 7XA. Phone 0628 770088.

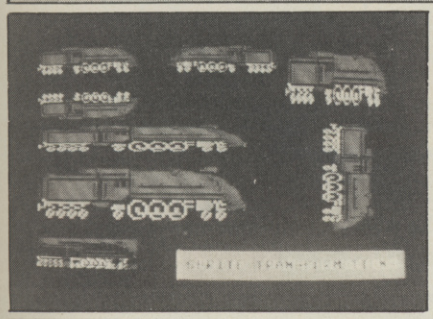
THE first-ever product of its kind for the 64, Petspeed was developed by Oxford Computer Systems and as Commodore's 'official' compiler, it must remain one of the most widely sold, although it is also among the most cumbersome. Before making a start you're obliged to generate four backup disks and that chore alone — involving as it does interminable disk swopping — takes the best part of an hour.

The compilation cycle itself is also slow, requiring four passes through each source program instead of the usual two, and Petspeed cannot cope with Basic extensions (not so important in the case of 128 programs because of the more extensive programming vocabulary that Basic 7.0 offers) or shared variables in overlaid programs. Nevertheless, Petspeed achieved some astonishing speed increases.

LASER BASIC COMPILER, £24.95 disk, £19.95 tape. Ocean Software, Ocean House, 6 Central Street, Manchester M25 1NS. Phone 061 835 1353.

BOTH floating part and decimal working are supported by a rare utility from one of the UK's most consistently successful games houses. It is actually an updated version from the White Lightning





range of programming aids originally published by Oasis Software some four years ago.

All the usual necessary features are offered plus a useful and very welcome extra — an option to Save the end result in turboload format so that the compiled, stand-alone version (and as many copies of it as you may wish to make) will Load from tape in a fraction of the usual time with strobing colour bars and all, just like a real pro effort.

A special feature of the Laser compiler is that it will handle not only programs written in conventional 64 Basic but also those created with the help of its sister utility, the Laser Interpreter (£19.95 disk, £14.95 tape), which adds more then 250 new commands and facilities to the standard Basic set. They include interrupt-driven music and a possible 255 sprites. Together, they add up to probably the most powerful programming package you and your imagination are ever likely to need this side of the apocalypse.

J.R.

COMPILERS

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WHAT will be your best buy? IF you do not have disk drive, your only choice anyway is Jetpack and Laser. The latter has the edge for its versatility and speed (see bench test). If you can use a disk compiler, then the choice would still seem to be between Jetpack and Laser — though if you do not mind Petspeed's slow set-up and you're not too fussed about language extensions or chaining, it too represents a very attractive buy.

Incidentally, prices shown are those originally recommended and there are definitely bargains to be had from time to time. For example, recently Calco Software have been offering Petspeed 128 at a giveaway £19.95 and the Oxford 64 compiler (from the same authors as Petspeed 64 but with a built-in toolkit too) for the same price.

It is also worth keeping a look out for knockdown stock in your local software shop. The market for utilities is limited and even mild overordering produces a pile of product gathering dust that will end up being binned at silly prices.

HOW DO THEY MEASURE UP?

TO get some idea of how different compilers perform, four typical Basic programs were processed through a selection of the compilers under review to ascertain what improvement in execution speed they could offer.

The programs used were *Plane,* a 48-second animated sequence taking 4K and using four sprites and a screen design constructed from the 64's keyboard character set; *Spriter,* a 6.5K editor that normally takes 27 seconds to calculate and print to screen a sprite design; *UDC Editor,* a 1.5K routine that transfers the entire ASCII set from ROM to RAM, redefines five characters and then generates a screen design using them in 36 seconds; and *Northstar,* a 13K text adventure that in its uncompiled form takes a minimum of 8 seconds to identify and respond to an unrecognised input.

The figures shown may be taken only as a guide. Indeed, it should be possible to improve significantly on the speed gains shown (with percentage improvement in brackets) by making optimum use of any one compiler's particular or special features.

	PLANE (48 secs)	*SPRITER (27 secs)*	*UDC EDITOR (36 secs)*	*NORTHSTAR (8 secs)*
BLITZ!	21 (228%)	17 (159%)	5 (655%)	2.5 (320%)
BASIC-64	25 (192%)	19 (142%)	8 (450%)	2.0 (400%)
JETPACK	23 (208%	20 (135%)	6 (600%)	2.0 (400%)
LASER BASIC	11 (436%)	6 (450%)	4 (1,028%)	1.0 (830%)
PETSPEED 64	9 (533%)	3 (900%)	4 (900%)	1.0 (830%)

Compunet

Special Interest Areas

Amongst the seven thousand Compunet users there are people with every imaginable interest and hobby. This is reflected in the special interest areas that have sprung up over the last few years. Other than the expected Commodore areas, covering every aspect of the C64, C128 and Amiga, there are areas for Psion Organiser owners, Christians, road-users, adventure players, chess players, astronomers and a multitude of other interests.

Psion users are served by two areas which contain detailed information about the pocket computer as well as software to interface the Organiser to the C64. Incidently this article was written on an Organiser and later downloaded for final editing on a C128D using software written by Compunet users.

METNET is one of the largest user-run areas on Compunet and as it name implies it's concerned with all things Meteorological. It's an online source of weather information, a meeting place for weather enthusiasts and a useful source of the latest short and long-range forecasts. At over five hundred pages of online data its said to be the largest non-commercial weather database in the UK.

Recently the 'Climatic Observers Link' have given permission for their data to be used in the area, making it even more worthwhile a visit.

Another large section in the Compunet Database is the 'Road Users' directory. Although one's initial reaction might be to dismiss such an area as being of little interest. It is invaluable. As well as articles about the law and use of the road for both the family and HGV driver it also contains a database of major long term roadworks. When planning a journey such information is extremely useful and on Compunet it's free.

A recent addition is 'Online' magazine. This is produced once a month by a group of users and has managed to attract many of the top writers on Compunet. Recent articles have included an interview with the singer Billy Bragg, an introduction to Bulletin Board Systems and a review of C64 emulators for the Amiga.

One of the newest, and currently the most popular area, on Compunet at the moment is Diesel's Dump. Articles in this area have covered everything from Xmas Parties to the fitting of Dolphin DOS. Diesel is looking likely to be voted personality of the year in Compunet's annual competition and her articles are always well written and hilarious. Her 'Blue Peter Guide to Fitting Dolphin DOS' explained how the parallel interface could be fitted with only the aid of a nail-file, hairdryer, electric carving knife and lots of Super-Glue.

EDTERM supports all the usual Terminal Emulator features, such as XMODEM and ASCII file up and download but also has a number of unique facilities. Despite running in C64 mode on the C128 it can access the 80-column screen and numerical keypad. But perhaps its most useful feature is the ability to scroll-back through a Prestel session, the cursor keys scrolling the screen through the frames previously downloaded. This facility also proves invaluable when answering messages on Bulletin Boards.

For those who wish to use their Compunet Modems to access other systems a new terminal emulation package for the C64 and C128 has recently gone on sale on Compunet. For a small sum users can download EDTERM which allows access to both TTY and Viewdata style systems.

J.L.

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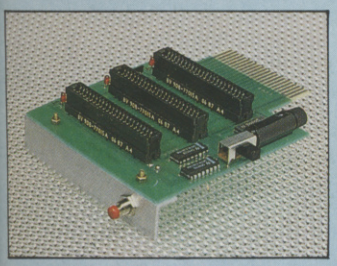

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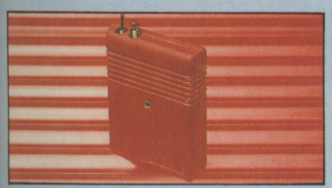

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Now you can have an 8K or 32K cartridge that you program like RAM then acts like ROM!

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"For anyone who uses their printer often this chip is a must. It's quick and easy to use and the end results are impressive" – Your Commodore, Jan 87.

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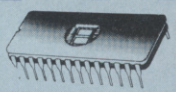

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Turbo Rom II is a replacement for the actual kernal inside your 64. It provides superfast load/save routines.

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- ❑ Improved DOS support including 10 sec format.
- ❑ Programmed function keys:- load, directory, old, etc.
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- ❑ Plus lots more.
- ❑ Fitted in minutes – no soldering usually required. (On some 64's the old ROM may have to be desoldered).

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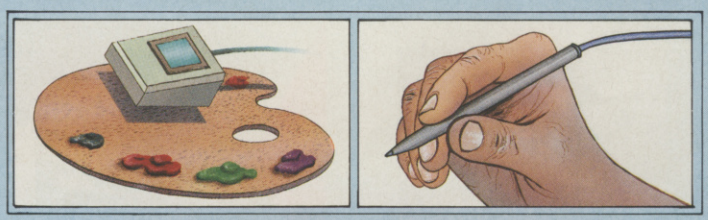

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A complete lightpen/graphics illustrator package.

- ❑ A fully icon/menu driven graphics package of a calibre which should cost much more.
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- ❑ Full command set with instructions.

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- ❑ The new sampler allows you to record any sound digitally into memory and then replay it with astounding effects.
- ❑ Playback forwards/backwards with echo/reverb/ring modulation etc.
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Digital Drum System

- ❑ Now you can turn your computer into a digital drum system.
- ❑ Hardware/software package.
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- ❑ Complete with 3 drum kits.
- ❑ Real drum sounds – not synthesised.
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- ❑ Excellent value! **ONLY £39.99**

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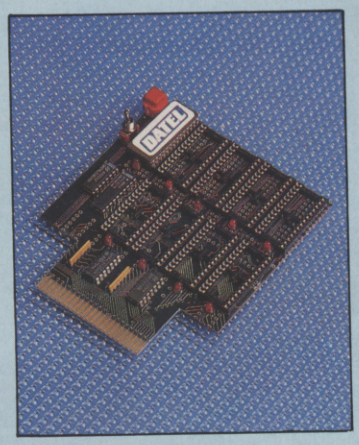

- Now you can select from any of 8 32K EPROMs instantly.
- 8 sockets to accept upto a 32K EPROM in each.
- On board operating system – no programs to load.
- Program your own EPROMs using our EPROM programmer.
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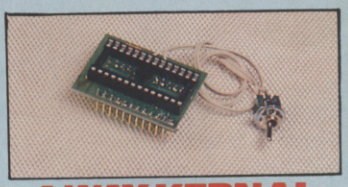

4 WAY KERNAL BOARD

- This board fits in place of the kernal in your 64 and accepts a 16K or 32K replacement kernal giving 2 or 4 different operating systems.
- Just flick the switch supplied to select between systems.
- This is a carrier only – ready to accept your own chip.
- Now you can have all your different systems available at one time.

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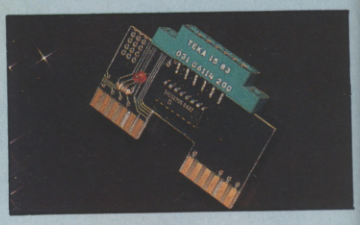

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- Makes perfect copies.
- Very simple to use.
- LED level indicator.

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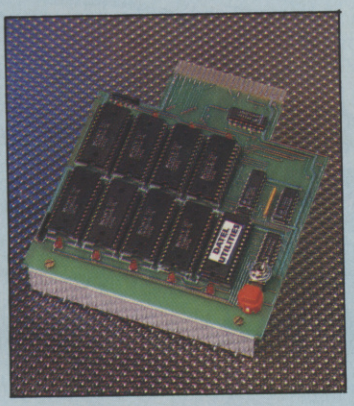

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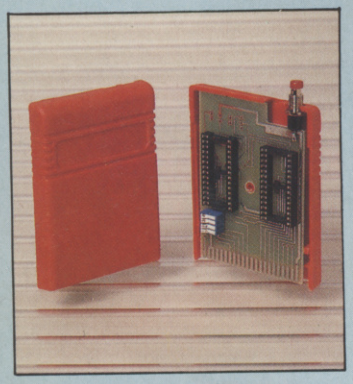

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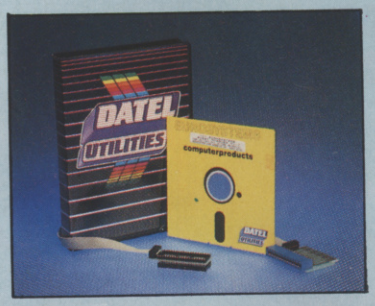

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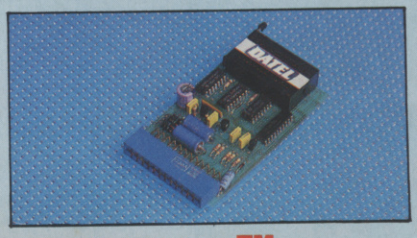

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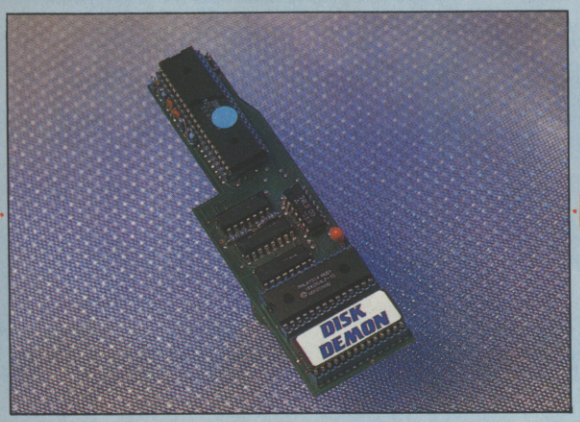

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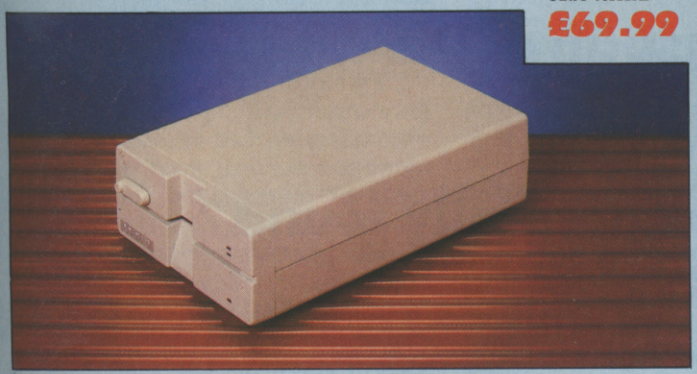

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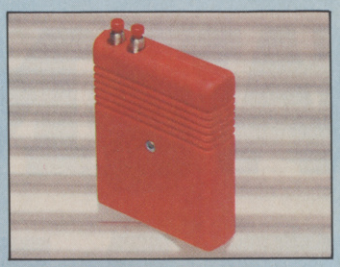

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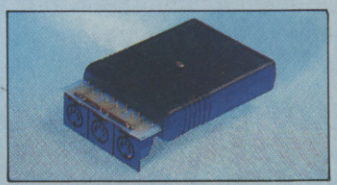

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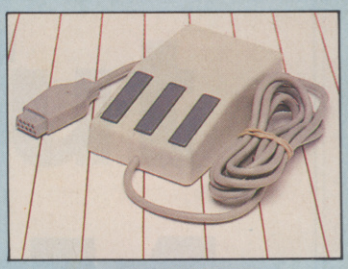

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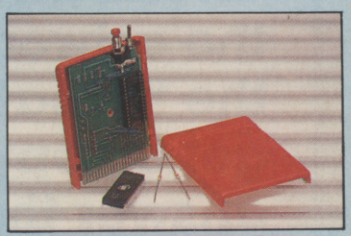

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1. **How many species of Albatross are there?**
   7 10 13
2. **How large is the wingspan of the wandering Albatross?**
   9 feet 12 feet 14 feet
3. **Where are Albatrosses normally found?**
   Northern Hemisphere
   Equator
   Southern Hemisphere

Simple, isn't it? Answers on a postcard please. The first six drawn out of the comp sack get the prizes.

Entries must reach us by April 30th, 1988.

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Spelling out the Adventure

"Words, words and more words"

Peter Gerrard, continuing his series on adventure writing, tells how to open the doors to success

Adding to the code that we've encountered so far, a line 70 might tell us that 70 GOTO vb*50+2000, which is fine on machines that have a computed GOTO command, whereas others will have to use a stream of ON VB GOTO instructions, 64 owners can add one if they wish, it's only about 12 bytes of machine code. Whatever method is used we eventually arrive at line 2050 if the variable vb contains the value 1, line 2100 if it contains the value 2, and so on. To incorporate the movement verbs from last month you would have to have a dummy set of lines, all jumping to 1050. Anyway, assuming that the first verb is 'open' and the second one is 'close', that is vb$(1)="open" and vb$(2)="close" (or vb$(2) ="clos" depending on how many letters you're checking for), here's how we might go about incorporating those two particular verbs.

First of all, some ground rules. In this adventure there are five doors that can be opened, an ordinary one in location 5, another ordinary one in location 48, and three rather special ones in locations 52, 53 and 54. Special because they are of different colours (yellow, green and blue) and each door requires a key of the correct colour in order to open it. The first two doors can be opened and shut at will, since they don't have locks on them. What, then, is the point of having them? Well, this adventure features a number of characters other than your good self, not all of whom are blessed with the intelligence to open a door at first sight. One of them in particular is more likely to blast it with his gun than he is to try and open it, so it gives you a little bit of leeway on the old time front if you get through first and then close the door behind you.

The three special ones are in a hotel (the others are simply the door to a stable and the door to a saloon), and getting the right key to fit the right door is a tricky enough problem in itself. Playing the game properly should see you opening them in the correct order as well: all part of the problem of solving this particular adventure.

"Boxes can, of course, be opened and closed anywhere."

But (of course) doors aren't the only things in the world that can be opened. Two boxes are featured in the game, and initially one is to be found inside the other, which then leads to all kinds of complications. In order to perform a specific task you have to have the correct object in the correct box, and various things can, if they are of a suitable size, be stored in one or other of the boxes. Thus verbs like 'put' (for putting an object in a box) and 'remove' (for taking it out again) have to be considered as well as the more ordinary open and close. We'll cover these problems when we get to them.

Secondly, as well as being aware of our variables vb, li, ac and no (for verb number, link word number, action word number and noun number) you'll need to know the following things. The variable that holds the current location of the player is cp, and as we've seen there are doors in locations 5, 48, 52, 53 and 54. Boxes can, of course, be opened and closed anywhere. The first noun is box, the second one door, the first and second objects are a large box and a small box, with the link word 'smaller' being used to distinguish between the two: this is the first link word.

Other link words are yellow, green and blue for the three coloured doors, and these are numbered three, four and five respectively, with objects three, four and five being the keys of the appropriate colour. Apart from that, we're just about ready to start.

Wait for it . . . .

Where do all these numbers come from, though? All arbitrary, and since these are the first two verbs (other than saving and restoring progress) that we're going to consider in any great detail it is sheer coincidence that sees all these numbers as being relatively small ones. Later verbs have suitably higher numbers, your own adventures will understandably feature different numbers in different situations, so there is nothing magical about having the blue key as the fifth object: it just happened that way.

The final point to consider is that the code you're seeing here is NOT the code from the finished adventure. Not because it doesn't work (it does, honestly) but because that finished code would be almost unintelligible to the person seeing it for the first time. For example, the phrase "You can't do that", and variations on it, are featured quite a few times: the finished game sees this replaced with a string variable in order to save money. Other phrases have also been replaced by strings in the final version of the game, but in order to make things a little bit more sensible I padded everything out a bit. Some of the code has been expanded a little as well, making it (hopefully) easier to follow: this is why some of the lines look inordinately long. Using strings instead of messages, and tokens instead of the full keywords, they'll easily fit into the 80 column line length (twice the screen width) of the 64. You would, needless to say, compact things down in your own games, but unravelling someone else's code is a difficult enough task at the best of times without me making it any more difficult for you.

The verb OPEN

Line 2050 is just a little reminder of what we're doing, which you would remove from the finished game for reasons of memory if you were getting a bit close to the limit (as I usually do).

Line 2052 then checks to see if the player has entered the noun 'box' as part of his input. If he has then trundle off to line 2070 to take care of that. Otherwise, we've got doors and everything else to consider, so line 2053 ensures that we're in one of the locations with doors in them. If we're not then there isn't anything to open, so tell the player so and send him off back to line 10 for another 'what now' prompt. The last bit of checking to eliminate all silly inputs from the player is line 2054, which insists that the player tries to open a door and nothing else (opening boxes is being taken care of by a separate part of this routine, remember). Trying to open his head, for example, would just bring up a response "You can't do that" and send program execution off to line 10 again. You might care to add more suitable responses if you have the memory.

The verb OPEN

```
2050 REM open
2052 IF no=1 THEN 2070
2053 IF cp<>5 AND cp<>48 AND cp<>52 AND
cp<>53 AND cp<>54 THEN PRINT"There's not
hing to open here.":GOTO 10
2054 IF no<>2 THEN PRINT"You can't do th
at.":GOTO 10
2055 IF cp=5 AND d1=1 THEN PRINT"You've
already done that.":GOTO 10
2056 IF cp=5 THEN d1=1:GOTO 2069
2057 IF cp=48 AND d2=1 THEN PRINT"You've
 already done that.":GOTO 10
2058 IF cp=48 THEN d2=1:GOTO 2069
2059 IF li=0 THEN 2061
2060 IF (cp=52 AND li<>3) OR (cp=53 AND
li<>4) OR (cp=54 AND li<>5) THEN PRINT"T
hat's the wrong door!":GOTO 10
2061 IF (cp=52 AND d3=1) OR (cp=53 AND d
4=1) OR (cp=54 AND d5=1) THEN PRINT "You
've already opened it.":GOTO 10
2062 IF (cp=52 AND ob%(3)<>-1) OR (cp=53
 AND ob%(4)<>-1) OR (cp=54 AND ob%(5)<>-
1) THEN PRINT"You haven't got the right
key.":GOTO 10
2063 IF cp=52 THEN d3=1:GOTO 2068
2064 IF cp=53 THEN d4=1:GOTO 2068
2065 IF cp=54 THEN d5=1:GOTO 2068
2066 PRINT"How did you get here?!":GOTO
10
2068 PRINT"You unlock and open the door.
":GOTO 10
2069 PRINT"You open the door.":GOTO 10
2070 IF li=1 AND (ob%(2)=-1 OR ob%(2)=-2
) THEN 2081
2072 IF li=1 THEN PRINT"You haven't got
the smaller box.":GOTO 10
2074 IF ob%(1)<>-1 THEN PRINT "You haven
't got the box.":GOTO 10
2076 IF o1=1 THEN PRINT "You've already
done that.":GOTO 10
2078 IF bo=1 THEN PRINT "You find a smal
ler box.":bo=2:o1=1:ob%(2)=-2:GOTO 10
2080 o1=1:bt=-2:GOTO 2085
2081 IF ob%(2)=-2 AND ob%(1)<>-1 THEN 20
74
2082 IF o2=1 THEN PRINT"You've already d
one that.":GOTO 10
2083 IF o1=0 AND ob%(2)=-2 THEN 2146
2084 o2=1:bt=-3
2085 of=0:FOR i=1 TO nn:IF ob%(i)=bt THE
N of=of+1
2086 NEXT i:IF of=0 THEN PRINT"There's n
othing in the box.":GOTO 10
2088 PRINT"There appears to be something
 in it.":GOTO 10
```

accordingly. Now our movement routine can be amended to include things like:
if cp=5 and no=6 and d1=0 then print "You can't go that way, the door's shut": goto 10
or something like that.

"If the door is open and he's trying to open it, he's wasting his time."

Line 2059 checks for the presence of a link word if the player is trying to open up one of the coloured doors. If he is, and he's attempting to open the green door when in fact he's standing in front of the yellow one, then line 2060 sorts him out. To be nice to the player the routine was written so that a particular door doesn't have to be specified. A simple OPEN DOOR will do.

Assuming we're standing in the right place, line 2061 then sees whether or not the door in question is open, repeating the earlier check on our two normal doors and telling the player that, if the door is open and he's trying to open it, he's wasting his time.

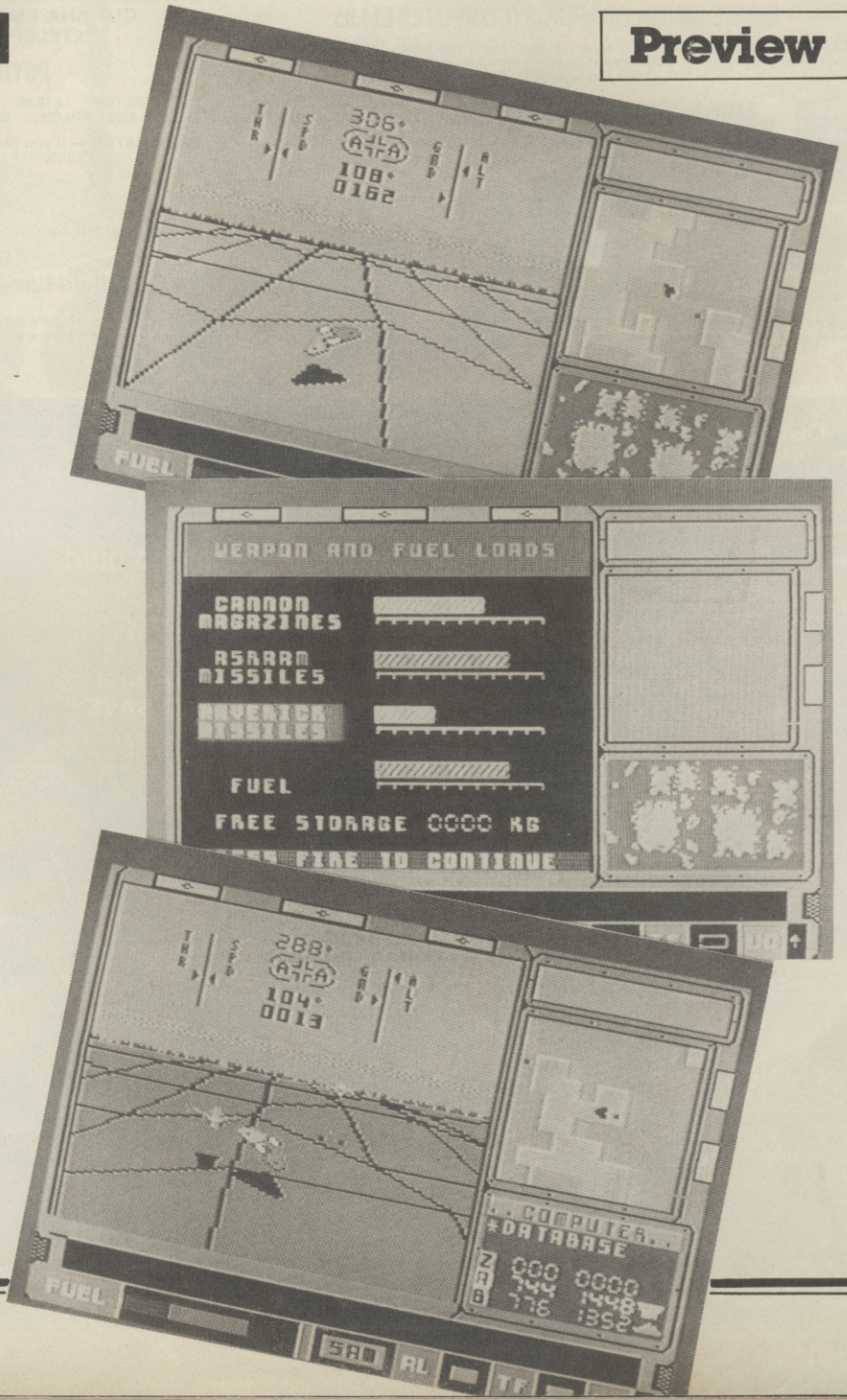
We now know that the player is trying to open the correct door, that it isn't already open, and so we can see if he's got the right key for the job. Yellow key for a yellow door, blue key for a blue door, and line 2062 sorts all that out for us in one swell foop, or even fell swoop. Knowing that, having got past this line everything is okay, lines 2063 to 2065 set the relevant door flag, line 2066 just being a little comment on my part because program execution never gets here. Lines 2068 and 2069 are used for the messages about doors that require locks and doors that just need opening.

Well, that sorted the doors out. In the next installment, we look at the boxes and appropriately bring the series to a close — how to close things.

P.G.

ATF

Preview



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Opinion

Jeff Minter finds tea —the drink not the smoke — mind blowing stuff, discovering fantasies of strange futures for Commodore, Atari and even HAL from 2001. What will he think of next — a computer called PG?

Quarter to two in the middle of a windy Welsh night, and I have decided to leave off writing the internal-sequencer module for 'Space II and bring you this. The Bug Which Prints Zeros Forever will just have to wait until tomorrow morning. Right now, I have just assuaged the raving dreaded Munchies with a sarnie followed by one-third of a cream-and-jam pie, and I'm just washing the lot down with a really good cup of tea. Tea. Wonderous substance.

All that is strictly beside the point, however. What I'm going to waffle about this month stems from some thinking I've been doing, and something I've been reading, too. The reading was an article about Alan Kay, the guy from Xerox who went on to Apple and there worked on the Lisa and Mac interface, you know, the pointers-and-windows stuff we all have nowadays even on the humble '64. It seems they had a lot of that stuff running at Xerox, back in the 'Sixties for God's sake, on flight-sim hardware! And here's us thinking that Intuition's such a brilliant hack, and how come nobody ever thought of doing it that way before — and all the groundwork was done 20 years ago! After reading that article, the thinking ensued — I fell to thinking: what have they got in the labs now? what's cooking in the Apple labs where they're using a flipping Cray to design the next generation of user interface?? And what would it be like to have a computer with such an interface? So I came up with the following spoof review — of a personal computer system you might buy to kick off the new millennium with — and I thought I'd lay it on you this month, instead of the usual 68000-worship . . .

*** Extract from Your Supercomputer magazine, 21/12/2001

EXCLUSIVE: PREVIEW of the Atari 'Discovery' computer system! . .

We have been fortunate enough to be invited to the headquarters of Atari where we were shown the new Atari 'Discovery' machine, which should be released this month. Atari have been working on this machine since the early 'Nineties, and now that superconducting chips and 'processor memory' (the logical development from the Transputer systems of late last millennium — ALL memory within a ProcMem-based system is capable of performing a variety of processing functions upon whatever it contains) are available, the design has come out of the labs at Atari and onto the streets. Well, we think Atari are going to freak a LOT of people right out with this new machine. Here's what we saw . . .

(Your Supercomputer hack, Zippy the Chiphead, takes over the story) . .

I got to Atari not quite knowing what to expect. Atari have been very quiet since they bought Commodore several years ago, and despite evidence of some activity in their research labs little has been known of what they were working on. After admiring the quaint little display of antique STs in the entrance lobby (did we ever really put up with pixles so large you could actually see them one at a time?) I was ushered into a large, comfortable room in which there appeared to be just a large desk and one of those amazing hydraulic chairs which look like they belong on the Star Ship Enterprise. No monitors, no disk drives, not even a fan. After a certain amount of confusion, I was assured that the desk was, in fact, the Atari Discovery computer.

At first sight the computer appears to be a large, black monolith, perhaps six inches thick, mounted on suitably high-tec legs. On sitting down to the machine you find that the whole surface can be tilted so as to be at a comfortable angle for the user. Of course, I sat down at the machine and felt a little foolish, I kept looking for the mouse and not finding one! I reached out a hand to touch the surface of the monolith, and got my first surprise: the Atari logo appeared in the middle of the smooth black surface. It looked just as if it were painted on, except for the fact that it was doing the most amazing colour-cycling. The image was startling to a computer user used to looking at monitors — even the highest-quality monitor cannot render graphics which look like they were printed images. This was my first encounter with Atari's new display technology — the 'screen' is composed of millions of tiny beads which change their colour according to what image is being displayed. The beads are opaque, and if viewed by ambient light, it appears that the surface of the monolith just changes colour. It doesn't shine, like a monitor, because unless you turn on the backlighting if it's really dark, the colours you see come from reflected ambient light just like they would for a piece of paper. The effect is uncanny.

On the Discovery, the whole upper surface of the monolith functions as both screen and interface to the computer. When you rest your hands upon the surface of the machine, it comes to life: after the Atari logo has been displayed the monolith changes into what appears to be a fine wooden table with a couple of bits of paper lying on it. (Atari assure me that the user can configure the default desk surface to be whatever he likes, so if you favour cracked Formica instead of walnut veneer, you can have it). The surface of the monolith feels faintly resilient: in fact it is a highly-accurate touch-sensitive surface capable of distinguishing between the lightest touch and the heaviest pressure. Operating the system is totally instinctive, as I found out: just reach for one of the pieces of paper and drag it towards you, and that's exactly what happens. You can do anything you could do with a normal piece of paper: turn it around a little so as to get a better view, slide it over or under another piece (depending on how hard you press as you slide) . . . of course you can't make a paper aeroplane out of it, the screen is still only two-dimensional! Examining the paper, I found that it was headed, in a neat hand-written script, 'Atari HAL operating system Version 0.9'. (The script is again user-configurable, so if you're into Epson Dot-Matrix circa 1984 on some kind of nostalgia trip you'll get your way). Underneath the main heading was a list of sub-headings; running a finger down the list highlighted each in turn and — a neat touch this — increasing pressure of the finger on an item caused the whole surface of the desktop to 'zoom in' on the selected area. Very useful for reading the small print. Tapping an item in the list results in another piece of paper being spawned — the paper and desktop look so real that seeing another piece peel itself off is quite startling and weird. I generated a sheet headed 'Demos' from the parent sheet, and received a written list of the available demos on the system. Simultaneously, a variety of familiar objects appeared on the desktop: a pen, a paintbrush, a globe (spinning, too) . . These objects can be grabbed, moved around, and tapped on in order to get them to work. There isn't enough space here to fully describe all the demos; the highlights included such things as a WP package upon which you could write with a finger, or by 'typing' on a representation of a keyboard painted on the desktop, or by using an empty fountain pen upon the surface of the 'paper' on the desktop. There was an art package which was operated by using real paintbrushes on the desktop surface — the surface can detect even minute changes of pressure — proper painting, but with all the advantages of computer graphics. I liked the lightsynth program from T.E.A. (a new software company calling themselves True Electronic Art) upon which some remarkable effects are possible by using both hands and that remarkable pressure-sensitive surface. Perhaps the most fascinating

continued on page 103

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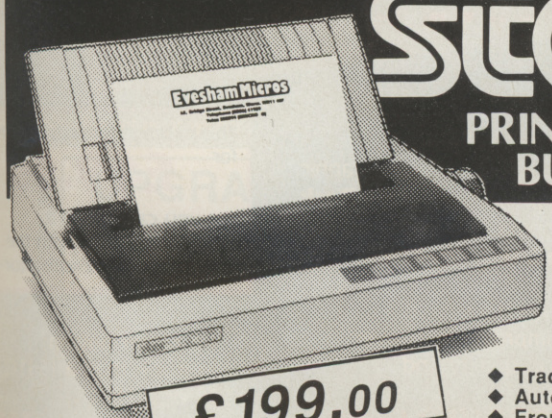

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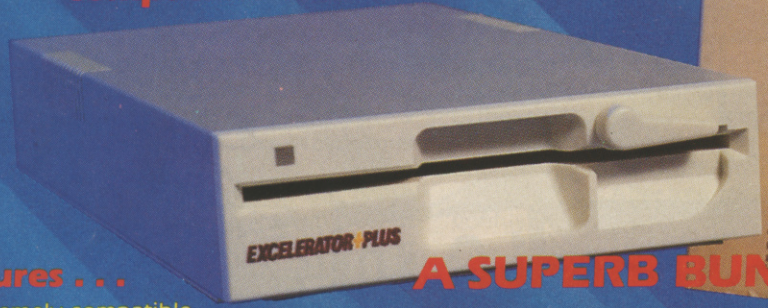

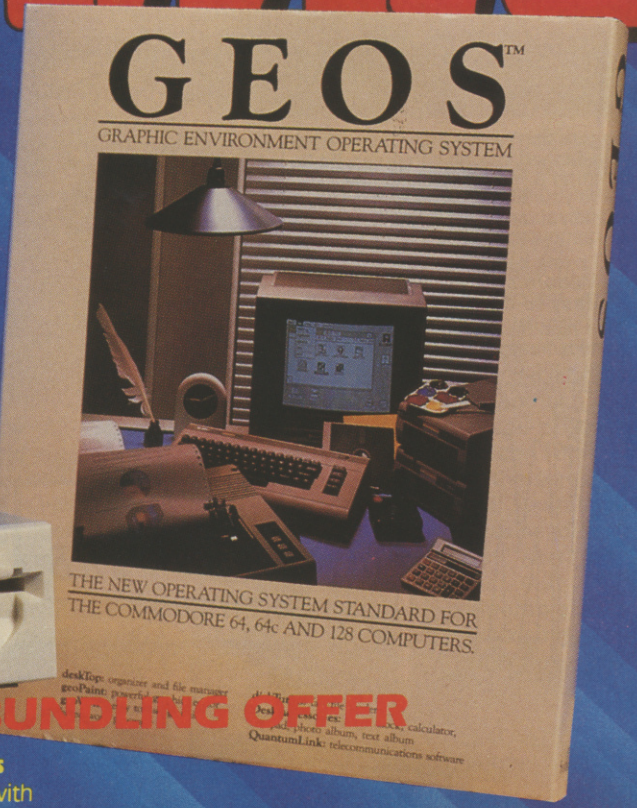

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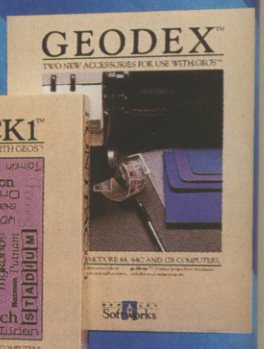

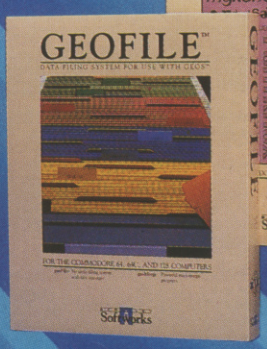

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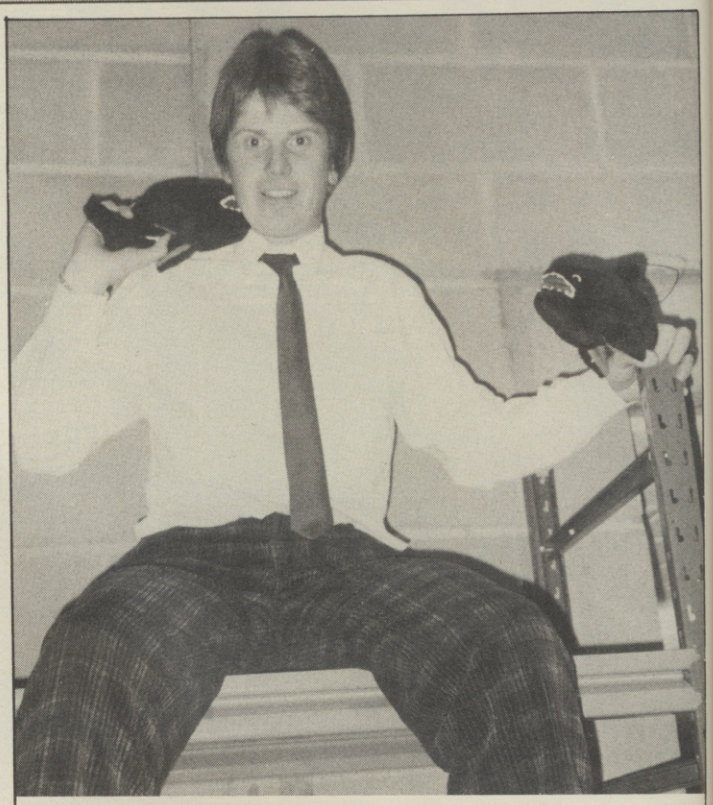
Super Felix is "Fee-line". That means pay cash and he won't n

Don't say I Didn't Warn You!

About a billion avid readers have demanded that I give you my predictions for 1987. Sorry 1988. You mean you were not one of them? I can't believe a reader of CCI with your taste and judgement would not have wanted to know this vital forecast... Well, no doubt you'll remember next year. Here it is anyway, you can be absolutely sure I've got it right...

Ariolasoft continues its run of smash hits with a game called "Yawn".
Zzap loses its editor.
Activision continues its phobia for telephones and refuses to return calls.
Codemasters claim to be selling more games everywhere in the universe than anybody including the Martians and Venusians combined.
Our Sacred Editor, after his sessions with Professor Kate Williams — specialist in the problems of aging ("One session with me and you age very fast") arrives at CCI Towers in a pram and short trousers.
Crash loses its editor.
Go's Tim Chaney signs up the rights to Toyota, Mitsubishi and Yukio Mishima.
CCI spells Richard Tisdall's name right.
Brian Clough takes on the Editorship of Zzap.
Electronics Arts nearly gets a game in the top 40.
Lord Whitelaw becomes Editor of Crash.
Karen of Anco admits she is starring in Anco's Strip Poker III.
Sue Quinn of Gremlin wins the Le Mans Alternative Race. She announces that next year she'll compete in a car.
Zzap loses its editor.
(Acting) Lieutenant-Colonel Bully Brown takes an ad from the Nicaraguan Contras and stops acting. Max the Ad gets his Equity card and starts.
Telecomsoft orders that £1.99 is to be added to everyone's phone bill but gives them a free Firebird.
Popular Computering Weekly gets a story about Elite right.
Crash loses its editor.
Tessa Sanderson becomes Chairperson of Commodore which names its next computer the Chelsea Javelin.
The U.S. Gold/Ocean/Gremlin empire gets 11 games in the Christmas Top Ten.
The Games Machine loses its editor.
Someone stays awake while reading Your Commodore.
Patsy Bitton reveals that she is the girl in "Defender of the Crown" who gave her all for chivalry. Robert Maxwell makes her Chairman of Derby Football Club.
Andy Moss announces that playing adventure games improves your sex life.
Anita Sinclair disagrees.
Rachel Davies takes over the London-Welsh Rugby club.
Jane Cavanagh takes over British Telecom.
Jane Smith becomes President of Argentina.
Sir Clive Sinclair launches the C6.
Zzap loses its editor.
Mirrorsoft sponsors Liverpool, Everton, Arsenal and Midlothian Football Clubs.
Jim Mackonikie is made captain of the England Ski team.
Andrew Hewson is accused of keeping programmes locked up in cellar dungeons.
Probe Software reveals that it wrote all the games of all the companies everywhere in the world since time began.
The Games Machine becomes an Annual.
Gail Wellington becomes Secretary-General of Software to the United Nations.
Amanda du Barry buys Activision.
Mickail Gorbachov buys an Amiga and plays SDI with Ronald Reagan. George Bush says "Sure, I recognise the Amiga but who are the guys using it?".



FUNNY FOTOS No. 12

Who is this man playing vampirically unhealthy games with Piranha fish? And why do people photograph him from very peculiar angles? Why indeed does he wear such overpacked strange trousers and thrust them at the camera so immodestly?

He is Roger Hulley the boss of a company claiming to offer 'Alternative' games — whatever that may mean. He apparently paid Gremlin a large sum to publish a game called 'Altemative World Games' to publicise his ideas and now he is trying to encourage gameplayers to take up Piranha feeding as an altemative hobby. He obviously finds it much more exciting them sitting front of a computer. Next month Roger Hulley explains how to enjoy Piranhas inside your 'alternative' trousers. And the Illegible Michael Boxter stars as David Bailey in 'Care fora Trip up my Olympus?'

Epyx publishes Autumn, Spring, Midsummer Night, Delaware, Arizona, Oklahoma and New Mexico Games.
Wyn Holloway buys Wales and converts it into a Konix joystick factory.
Jane Cavanagh sells British Telecom to Nintendo.
Microprose gets the Nobel Peace Prize.
Nadja Headlines vows "No more toyboys!" and falls for an older man of 18.
Grand Slam buys Redifusion Simulations and Stephen Hall admits he is an Admiral in the U.S. Navy and keeps the Red October in his swimming pool.
Tony Horgan nearly likes a game. He goes home ill.
Keith Miles arrives on time. The whole CCI Tower dies of surprise.
Ollie North becomes editor of Crash.
Prism buys Watford Football Club from Elton John and changes its name to Pauline's Addictive Games.
Zzap becomes a daily newspaper edited by Alan Whicker.
A U.S. Gold game has a music cassette that outsells Michael Jackson. Geoff Brown buys Michael Jackson.

mention you... unless somebody else pays me more!

Birmingham changes its name to Centresoft and is 1997 Olympic Games. Crash loses its editor. Andre Jaygee becomes Professor of English at Southampton University. So does his mother. Saatchi and Saatchi buys the Bank of England. Mastertronic's Frank Herman buys Saatchi and Saatchi. Database publishes Mini-Office 17 and gives Richard Franklin the freedom of Stockport. Michael Meakin becomes President of IBM. Newsfield cchanges its name to "Frayed at the Edges". Zzap loses its editor. Domark announces it has signed up the rights to a "Birth of a Nation" computer game. Alan Sugar announces a computer that is also an electric kettle. It overheats and boils the water for your tea at the same time. Atari's Jack Tramiel says he thought of it first. Paul Welch claims he drives to work in a Transputer. Jeff Minter announces his engagement to an ST. Virgin's Leisure Genius releases "Mates" for the C64. Frankie Kafka takes over as Executive Editor of Zzap. Ariolasoft continues its run of smash hits with "Yawn II" Zzap becomes a free evening newspaper and changes its name to The Ludlow Sewage Times. It reports that Elite has stopped publishing games and is starting a fruit and veg import business. It loses its editor. Super Felix receives hate mail by the truckload, ignores the death threats and is assasinate. Condemned to eternal damnation or the editorship of Zzap and Crash, he chooses eternal damnation. God says he was only joking and really meant taking over Ariolasoft. Super Felix insists on eternal damnation. God says forget it, he's not getting off that easy and makes him go on writing for CCI.

COVER UP!

I object to the pictures on the cover of this CCI. Everybody knows that all the snow in the world disappeared early in December as tropical weather hit Newcastle, England where Winter Olympiad 1988 was due to be held. As for the Alps it is now like being on the Equator. Max the Ad, whom you may remember under the pseudonym of Jean Claude Killy winning the slalom in the Fols had to climb to the top of mount Blanc with a truck load of vanilla ice-cream to allow him to 'Chse Niege'. That is an old trench sport which translated means 'Hunting the Snow'. When you find any you beat it to death with skis which have edges sharpened on old computers. That I suppose is better than the other nasty items on CCI's cover, especially the gunman from Impossible Mission. Violence, as I said to Prince Charles at Christmas when we shotgunned a few thousand grouse, sheep, moles and peasants, is to be deplored, especialy in computer users. "I would never allow a sheep with a gun to roam the Royal Estates," he replied. "Or let a mole play Impossible Mission. You might end up with a revolution like in 1688." So please do not look at CCI's cover again before you lock yourself in the cellar and throw away the key. (Anyone seen the 'No Way Out' movie? Now there's a Man who knows how to use a gun!)

The Baby and the Bathwater?

What is the 'Fontwater' thing that everyone is talking about? I can't see any reason why you shouldn't need a computer program to tell you how to dip babies in a stone apparatus in a church. I suppose you plug it into the altar and have it heat the water while it automatically intones 'You are named Commodore Reginald Disk Drive Smith and your Godfather is Charles Syntax-Error'. And has it any connection to this new computer game from Virgin Games I see advertised everywhere called 'Play Mates'. I believe the review in 'Playboy' said its protection system was almost perfect. It's the *almost* that worries me. What about if you're in the middle of a high score game and the protection fails? Well I suppose they could sell Fontmster in the same package with 'Mates'. That should cover all eventualities.

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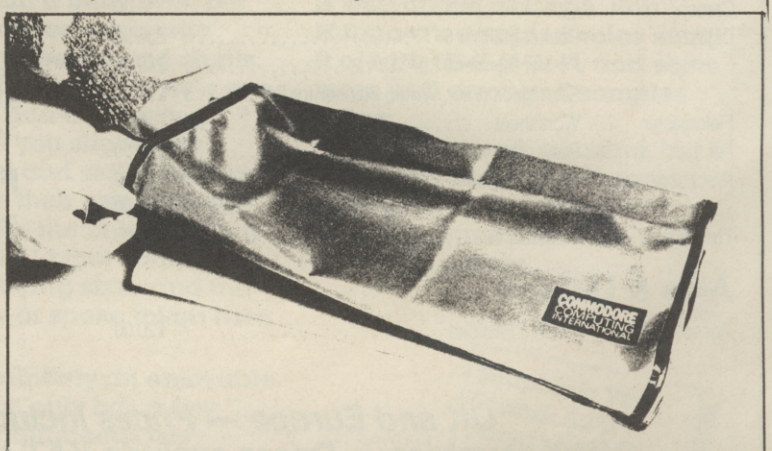

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C64

CRISP

BMX Kidz

Firebird

One sport that seems to attract budget software producers more than any other is BMX. I can't think of any full-priced BMX games, but BMX Racers, Trials and Simulator all spring to mind as cheapies that cashed-on the sport. The rather patronisingly named BMX Kidz is the latest addition.

'Kidz takes a side on view of the track in much the same way as the arcade game Exitebike. The object is to complete each track in a given time, whilst performing a set amount of tricks along the way. Each race is against five other riders who think nothing of riding straight into you. One leads suspiciously like an ex-biker we know called (now Nick the skate freak!) This can be a problem as it reduces your number of spokes drastically. The spokes are a way of telling how much damage your bike has sustained, and they decrease with every collision or bad landing.

Two tricks are available: a wheelie and a mid-air cross-up. Level one simply needs to be ridden within a time limit, but later levels need a specific number of wheelies and stunts. Wheelies are easy, but slow you down, and mid-air stunts accellerate you slightly and need speed and skill. Different tracks have their own theme, ranging from moon-lit streets to forests. Their layout consists of jumps of varying sizes and the odd energy or spoke token here and there.

This is definitely an enjoyable game, which only has a few flaws. A simultaneous two player option would have been nice, and also some sort of tricks indicator wouldn't have gone amiss. Maybe the controls could have been a bit better, but they're Ok once you get the hang of them.

The game's graphics aren't bad for a cheapy, and the music is well above average. Rob Hubbard's sampled voice starts it of with "G-G-G-Go!", and some more well arranged samples follow.

BMX Kidz isn't amazing, but is one of the best budget games around at the moment, and won't be binned after the first couple of games.

T.H.

Graphics: 78%
Sound: 82%
Playability: 72%
Overall: 79%

WINTER OLY

Tynesoft

Tynesoft are now going for the serious big league '64 market, with this release which is on all formats, and has had some really heavy back-up. It also has the added lure of a weeks holiday for two in Calgary, Canada as a prize. During this week, you will be escorted around the many sports going on, in the Winter Olympics.

The holiday sounds great, but how does the game fare? Is the holiday the only reason for buying the game? Are the graphics any improvement on the previous release in this vein? Does the gameplay compare to Epyxs' Winter Games? Well these questions, and many others you weren't thinking of asking will be answered if you plow onwards.

The cassette comes with a booklet, that has an introduction by David Vine. It also has a summary of each of the events, to get you in the mood for playing.

The game is a multiload and each event has its screen shot — a kind of abstract, or surreal version of the event — nice one guys... the intro screen where you enter the amount of players, etc, on the other hand is truly incredible, as are most of the graphics throughout the game.

"You control your jumper, by pressing the fire button to launch him, and then contorting yourself and your joystick into several very unhealthy positions"

Ski Jump is the first event on the tape and the booklet gives you advice about how to get that ever elusive high score-leaning forward for less wind resistance and keeping your skis steady for that all important landing. This event is very original in that your view of the slope is in 1st person 3D graphics which are let down only by the very poor main sprite, which shuffles onto the screen when you're ready to jump, like a puppet trying to do a moon walk. You control your jumper, by pressing the fire button to launch him, and then contorting yourself and your joystick into several very unhealthy positions, to keep him and his skis in the right position, you then bring the joystick to the left as you land. This event has some really great graphics and Wal Beben has done an excellent job with the music.

Downhill, the next load, is my least favourite event mainly because of the way you have to play the game. It,like the Ski Jump,takes the skier, and puts him facing down the slope, but it's not this that I object to, its the fact that you have to jump over logs. dodging trees and avoiding ice I can swallow, but jump over logs — come on guys this i s a simulation of the real thing, and I don't think you'd find logs on any winter olympic downhill course. Though I admit it might happen if you are into the new off piste powder skiing. Another thing I don't like in this event is the way your skier has to gain speed — he moves his arms like he's skipping and there's a terrible sound effect to go with it.

However this event is by no means rubbish, and the graphics, though not up to the high standard of the rest of the game, are very good — for an attempt at solid 3D anyway. And this event isn't going to get completed in a hurry since you don't get extra chances if you fall. A challenging and slightly disappointing event, that will appeal or not, depending on your own tastes.

"The Epyx version of this provided all the ingredients of the real sport, as did Anco's C16 version, and I'm pleased to say that Tynesoft have improved on both"

The biathlon, is said to be one of the most gruelling events of the Olympics, needing endurance and concentration. It's a kind of marathon but as well as skiing for long distances you must fire at targets on the way. The Epyx version of this provided all the ingredients of the real sport, as did Anco's C16 version, and I'm pleased to say that Tynesoft have improved on both.

As you ski through the awesome backgrounds, you'll notice the cute touches like the bird on the biathlon sign or, the boat in the lake. What really annoys me, is that the breakdancing sprite is back and this time he seems to get kicks out of moving frantically out of time to your rythmic joystick movements. That apart this is also an excellent event and the shooting has been slightly changed as well, so that now you can actually see your man taking a bead on each target in turn. Good stuff that.

Slalom is my favourite event and once again the graphics are outstanding even that dodgy sprite looks alright this time. Though, he does seem to be a little stiff. Tynesoft have again decided to opt for a original approach, and in this event your man is placed at the top right of the screen in a little hut with a flag waving from the top of the roof as you start, a bird decides to fly down and watch your performance: two more of the little touches that you usually only expect to find in a top Epyx or Gremlin release. You scroll down the screen from right to left, and try to weave through the flags that litter the course. Once you get proficient at this you can then try going for a little extra speed by pressing the fire button.

MPIAD '88

"The graphics of this game are far superior to any previous version of it"

This event is excellent, and when you try going fast it brings out all the realism of skiing for real. The music is pretty funky too, though I've gotta say, it's a real shame about that damn sprite...

The last event, Bob sled, is one of the most dangerous winter sports and you need split second timing and judgement to get through them tight bends. It is presented, as all the other versions of this event, with a map beside you, but, unfortunately it, has no bearing on the course, and only causes confusion as, you start taking bends which aren't on it.

Nevertheless, the graphics of this game, are far superior to any previous version of it, and it actually looks like a tunnel you're moving down. Trees scroll past on either side very nicely, and look especially good when you're taking corners. In fact the only thing that spoils the game, is the sprite that you control as you push the two man bob on its way.

Overall, this is a very, very polished release from Tynesoft, which bodes well for future games. The music is top notch, except for the horrid sound effects, and the graphics are just incredible, except for that sprite... It's details like this that make a good game, great, and is why Epyx are so popular. And Tynesoft now move into their class. The only other thing is the amount of events — only 5, and though original, we've seen similar before. If it weren't for that I wouldn't have any reservations about this game. Ian Davidson and Co. have done some excellent programming, and Mike Owens, the graphics man, is an artist to watch out for if he can get those sprites looking a bit better...

A really good game, and there's always the chance of a holiday to look forward to as well.

Graphics: 93%
Sound: 92%
Playability: 86%
Overall: 91%
Rating: Awesome

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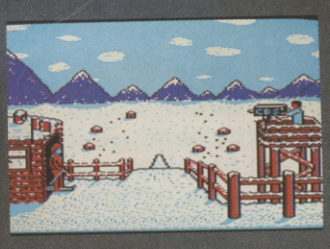

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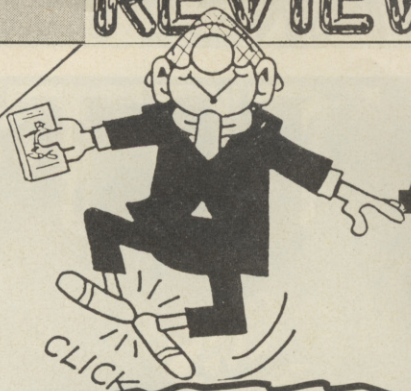
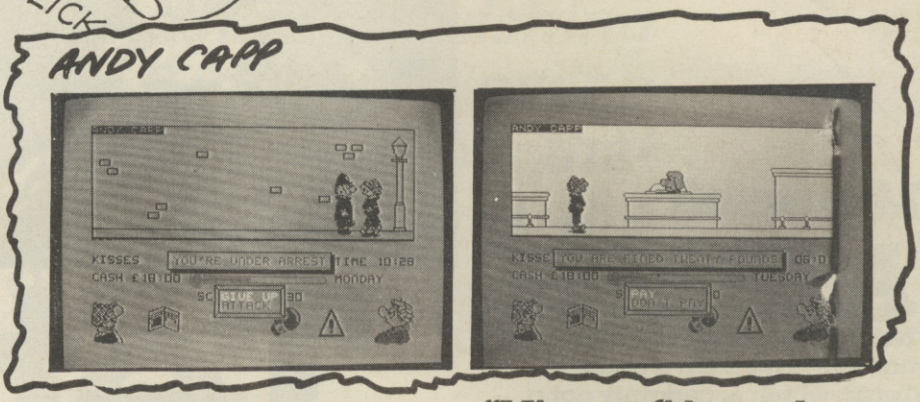


ANDY CAPP

Mirrorsoft



Most recent comic strip based computer games have come from the many Transformers type comics, none of which have been very good. Andy Capp, from the comic strip in the Daily Mirror paper is in a very different style. Could this be the first decent computer gamed based on a comic?

You are Andy, an unemployed northerner married to a right nag of a wife called Flo. Now Flo might be a pain in the neck, but she keeps you off the streets. She's now demanding your dole cheque. The idea of the game is to raise enough cash to stop Flo deserting you.

The first thing you notice is the lack of colour (in keeping with the comic strip) which gives it a very drab look. Your house, where you start, and the surrounding streets and buildings are all drawn in black on white. The very simple line drawings for backgrounds do nothing to help this. Fortunately, the characters are a lot more attractive and detailed. I wouldn't have thought a game based on the daily occurences of an unemployed man would be particularly entertaining, and frankly it is not.

"If you come across the rentman or the copper, you could blow a kiss at him which will stun him, giving you time to escape"

Control of Andy is via a menu and icon system. A few options can be set using the menu before the game gets going, one being the option of simple sound effects or Dvorak's New World Symphony (the Hovis theme!). During the game, Andy is controlled by the joystick in the normal way, but can also be made to do specific things by selecting icons and menus. If you come across the rentman or the copper, you could blow a kiss at him which will stun him, giving you time to escape. Anyone else you meet in the street can be stunned like this too. You can then talk to them, or start a fight. If you win, you'll normally come away with a tenner, but either way you'll lose precious stores of alcohol. Top ups can be bought in the pub, but if you run out, it's game over for you and Andy.

The way the streets are laid out can be confusing. A nice idea would have been to supply a map wih the game to avoid frustration when you realise you've been going round in circles for the last five minutes. Perhaps an enthusiastic reader might help. Both the graphics and game style reminded me of Advance's Laurel and Hardy.

I like a good arcade adventure, but Andy Capp is more of an unemployment simulator, which is not by its nature a highly magnetic subject. A lot of the screens look very similar, consisting of simple brick walls.

"Mirrorsoft have done a very fair job considering the subject"

There are some attractive parts to the game, such as the characterful sprites, and comical fight sequence which really is very good imitation of a film cartoon. It's a shame that some parts have had a fair bit of time put into them, but others, such as the backgrounds, look as if they've been thrown together in a matter of minutes.

Mirrorsoft have done a very fair job considering the subject, and with perseverance, Andy Capp could give a bit of satisfying puzzle solving, but the nature of the comic strip does not seem realy suited to a computer game. It's not by any means a terrible game, but just not entertaining enough to overcome the basic difficulty of making such a subject sufficiently pleasing and attractive.

B.V.

Graphics: 68%
Sound: 65%
Playability: 49%
Overall: 56%
Rating: IFFY

Price: £9.95 (cass)
£12.95 (disk)

C64

IFFY

Tetris

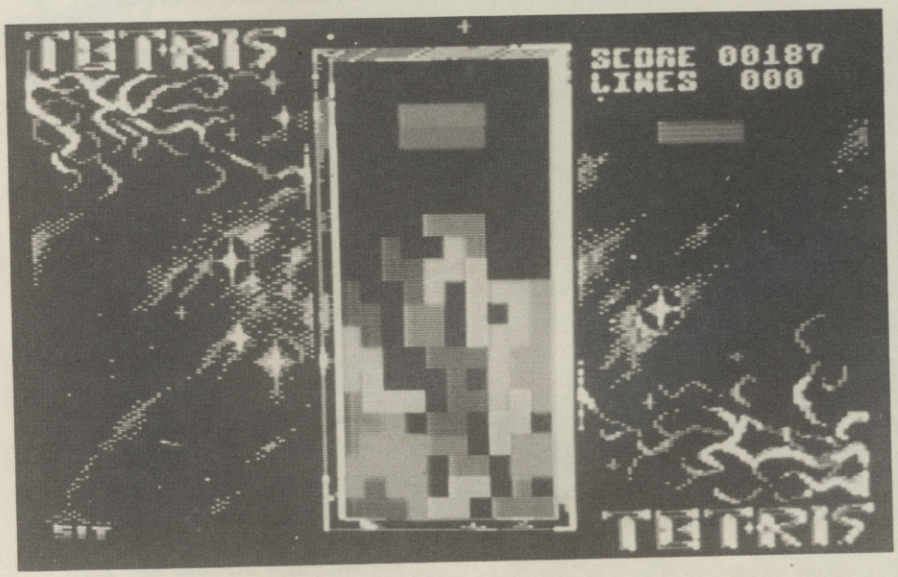
Mirrorsoft

A typical claim made by producers of puzzle games is that their game is "simple but totally addictive!" Mirrorsoft hope to have such a game in Tetris, which is certainly not a run-of-the-mill production.

Simple it may be, but addictive? Well, that depends if you like puzzles. Tetris uses the centre third of the screen for the game, with a static screen surrounded to jazz it up a bit. In this central window, shapes of varying colour form and fall down from the top, 8 pixels at a time until they reach the bottom or hit another shape. These shapes can be turned through steps of 90°, and moved sideways as they fall.

The object of the game is to manipulate the shapes so that they fit neatly together to make a complete horizontal line. When a line has been made, the whole stack shifts down one character. If the shapes pile up to the top of the screen, because you've not made enough lines, the game is over. The longer you keep going, the higher you score.

Mirrorsoft reckon that the whole office can't stop playing. To me it was definitely not what I'd class as addictive. For two or three quid, Tetris would be very acceptable, but at this price (£8.95 on cassette) it just doesn't seem likely to offer enough entertainment for an older/stroke keen player. One can see that for someone younger as for a family Tetris could have considerable attractions.



The only moving graphics are coloured blocks, but the title screen picture is a lot better. A soundtrack plays throughout at a suitable rate, which although it doesn't want to make you get down strut your stuff, is very pleasing all the same.

One interesting fact about this game is that it was created in Russia and it is possible to see that a deliberate effort has been made to come up with a game that avoids the clichied violence of as many games created in the west. In this Tetris succeeds well and is a puzzle of some complexity.

But for anyone other than puzzle game-lovers, it may ultimately prove too simple and somewhat lacking in bloodthirsty excitement.

T.H.

Graphics: 42%
Sound: 83%
Playability: 47%
Overall: 50%
Rating: IFFY
Price: £8.95 (cass)
£12.95 (disk)

Sadly the pantomime of real life doesn't allow for ordinary mortals to be granted their wishes at the wave of a wand, but there's no harm in wishing . . . Graeme Kidd mulls over a few of the developments that he'd like to see during the course of 1988.

Looking for a good fairy . . .

It's still a little bit difficult to justify owning a home computer to your maiden aunt when she comes to stay for Christmas, isn't it? Maybe you can, if you're a high-flying corporate executive who's brought his Apple home to generate a few more of those impressive reports while the kids cover the carpet with wrapping paper. Just point at the screen when the TV advert comes on, and Auntie will understand that a computer plays a vital part in sustaining your yuppie lifestyle . . Humbler mortals don't have it so easy.

Sure, yeah, a home computer is educational . . . all very worthy 'n' that, but try explaining to Auntie what exactly it is that you learn. "Well I suppose computers are a thing of the future", Auntie will no doubt end up muttering, totally bemused, before changing the subject to what things were like when SHE was a girl.

Wish number one

Wouldn't it be great if, in time for next Christmas, home computers were so patently useful there'd be no problem in explaining to Auntie why you'd included the Ataridore 68,000,000 on your list to Santa?

A deceptively simple wishette on the surface, no apparent challenge to your average fairy. But I've been planning how to get the best value out of my Three Wishes should I ever rub a grubby monitor screen and invoke a techno-genie. Of course, Wish Number Three and every subsequent wish has to be 'another three wishes', but just in case that obvious scam doesn't work you need to pack as much as you can into your requests. Implementing Wish Number One would be a non-trivial task for even the most accomplished of fairies.

Let's face it, home computers really aren't all that useful at the moment. Great fun, whether you get off on blasting aliens, hunting treasure and trolls or delving into the world of code and compilers, but useful? Not really.

Take word processing. Most folks, in the course of their ordinary lives, don't really need to process words outside the office. As I write this (on my word processor, but I am working) the SDP and Liberal Parties are trying to merge, and the long central document they're trying to agree on is being updated every few hours on a word processor. Exactly the kind of work situations where word processors come into their own, but when it comes to writing a Thank You letter to Auntie praising the virtue of the socks she gave you for Christmas, isn't she going to be more impressed to receive a missive written in your own fair hand? Word processors aren't much use in ordinary life at the moment — try word processing the Thank You letters after you get married, and you fire the opening salvo in war with the in-laws . . .

The Amstrad PCW machines introduced the computer as typewriter into millions of homes, and is a wonderful example of a functional, useful computer sold at the right price. Yes Auntie could probably be impressed by a computer processing words. But the thing still uses a keyboard with a QWERTY layout dreamt up when Auntie was a Bright Young Thing, a time when the

CONTINUED ON PAGE 84...

PREVIEW

IMPOSSIBLE MISSION II

Epyx

...From the lift you enter the first room...

...But where to next?...

...Can you access the next tower?...

...Running into more trouble?...

At its time of release, Impossible Mission was an amazing game, which set standards few games have since met. Many describe it as a best game ever, and with good reason. If ever there were a classic, this must be it. Not surprisingly, the sequel Impossible Mission II is on its way, and it's looking good.

At the end of Impossible Mission I, the evil Elvin Atombender was stopped at the last minute from blowing up the world. This was a job for no ordinary man. The special agent assigned the mission of penetrating Elvin's underground lair, and assembling numerous complex punch cards to access his inner sanctum had to be agile, alert and have his wits about him. Deadly defence robots patrolling the network of rooms, and the complexity of the punch card puzzles made this indeed a seemingly impossible mission.

However, against all odds, it was accomplished only for Elvin to bounce back with another plan to devastate the human race.

The sequel is set in a hotel made up of a number of towers. To access each tower, three code numbers hidden in the everyday objects around the hotel must be collected to open the security doors. Once again, Elvin's robots are a major hurdle, continually zapping and chasing intruders. Each tower of the hotel has a different theme which ties in with the objects you'll find. For example, there's an office section, garages and a gymnasium all to be searched for hidden clues. The familiar lift system links the rooms which are laid out in a similar way as the original, but have been improved in terms of detail.

Epyx must have the best technical reputation of any games house, one that will only be improved, going by the quality of the preview version we saw. They've chosen to stick with the same basic concept, the platforms, lifts, pocket computer and so on, and have made small changes in most areas. At the moment it's not known whether Impossible Mission II will include speech, one of the things that made the original such a hit. So you'll have to wait for the full review in the coming months to find out. All going well, Impossible Mission II has every chance of turning out as one of the greatest games of the year.

T.H.

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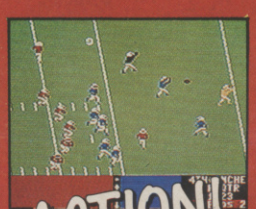

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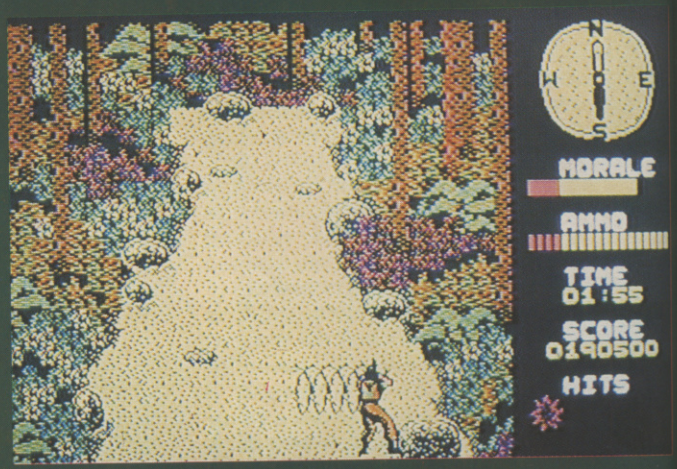
MEGAREVIEW

PLAT

Ocean

The first casualty o



Games based on TV and movies have got a bad reputation over the years, with software companies buying the rights to the latest films and writing the bare minimum of a game around the plot. Fortunately, Ocean have put a lot mor time and effort into the design and programming of Platoon, and it is clearly visible during the game and immediately noticable in the play.

Platoon is the game of the film about a group of young Americans in the Vietnam war. It takes the player faithfully through six scenes from the Oscar-winning film.

It all starts in the dense Vietnamese jungle. Taking control of the members of your platoon, your first task is to find a box of explosives to blow up a bridge. The jungle is an easy place to get lost in, and this is presented in the form of a maze of paths amongst the greenery. As well as a good memory for the maze, very quick reactions are needed to fight off ambushes from soldiers, and a keen eye needed for trip-wires.

"Innocent villagers scurry about, and reasonably enough shooting one by mistake decreases your morale dramatically"

The sprites are excellently detailed and very well drawn in this section, though the backgrounds hardly vary. It is not easy but finishing it is highly satisfying.

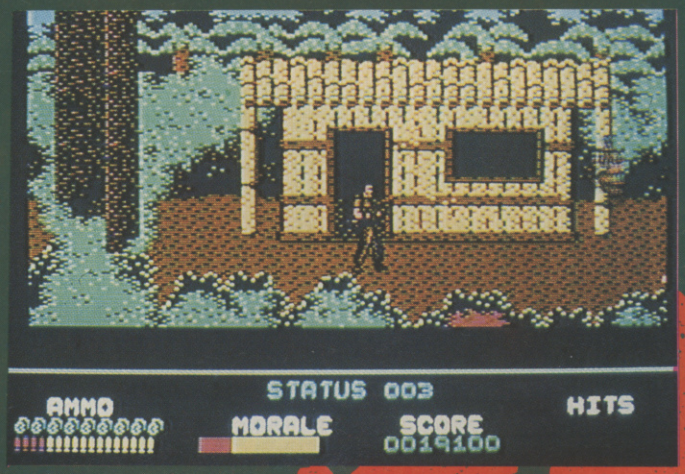
Once you've blown up the bridge, you will come across a small village. Innocent villagers scurry about, and shooting one by mistake decreases your morale *dramatically*. If your morale is re_duced to nothing, you give up and the game ends. Searching the huts, you come across a torch, a map and a trapdoor which leads down to a network of underground tunnels, and the third stage.

This is another maze, but in a very different style. The view is through the platoon member's eyes in 3D. Using the map, you now have to find some flares and a way out. Vietnamese soldiers fiercely guard the tunnels, and will kill any intruders. Some will shoot at you from a distance, but others will swim through the shallow waters and pop up right in front of you with every intention of hacking your guts out with a 12" knife. Again the graphics and sound are very good, but I'd have liked the tunnel animation to be a shade smoother. Finding the exit takes you into a bunker, the next stage.

Looking out of the bunker you can just make out the guerrillas closing in on you. Night has fallen and flares are needed to light up the jungle. This is a fairly straight forward section, again viewed through the eyes of the platoon

TOON

ty of war is ~~innocence~~ TRUTH!



member, in which a number of soldiers have to be shot with a limited amount of ammo and flares.

"As always, there are guerrillas to fight off and an abundance of booby traps to be avoided"

Surviving that, you go in search of your platoon leader. On meeting Sergeant Barnes, he tells you that your platoon leader has been killed. You split up again, and witness Sergeant Elias, your leader, being gunned down by guerrillas. You then decide that Barnes is indirectly responsibile for his death. Suddenly a message comes over your radio announcing a planned air strike in two minutes.

This gives rise to a sort of flip-screen Commando game. A route to shelter must be found before the air strike. As always, there are guerrillas to fight off and an abundance of booby traps to be avoided. Perhaps because of its difficulty, I found this the least satisfying stage but it is certainly a terrific challenge.

Finally you reach the foxhole that was to be your shelter, only to find Barnes already there. Realising you know too much, he opens fire. To escape the imminent air attack, you have to get rid of him with some well-aimed grenades. Succeed in this and you've made it to the end of the game.

Throughout the game, the graphics are excellently drawn, and on the whole well animated. Music and sound effects are also outstanding and add realistic atmosphere. Because of its size, Platoon, loads in parts, the price to pay for a game such as this.

The multi-load will detract from the cassette version, but will ultimately provide a satisfying game. There's a strong urge to reach the next stage, but each does lack a little in excitement. Ocean must be congratulated for writing one of the few competent film tie-ins. It genuinely follows the plot closely, and keeps 'the moral dimension' the film's producers demanded. This must be considered one of the best programmed and all-round satisfying and challenging games that has been produced for the 64. With Platoon and Combat School, Ocean have set a standard for this type of game that no other company has yet reached. Buy this, you can't fail to enjoy it.

T.H.

Graphics: 86%
Sound: 85%
Playability: 86%
Overall: 86%
Rating: Awesome
Price: 98.95 (cass)
£12.95 (disk)

PLATOON

The first casualty of war is innocence.

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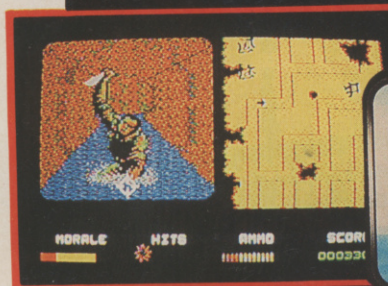

ocean

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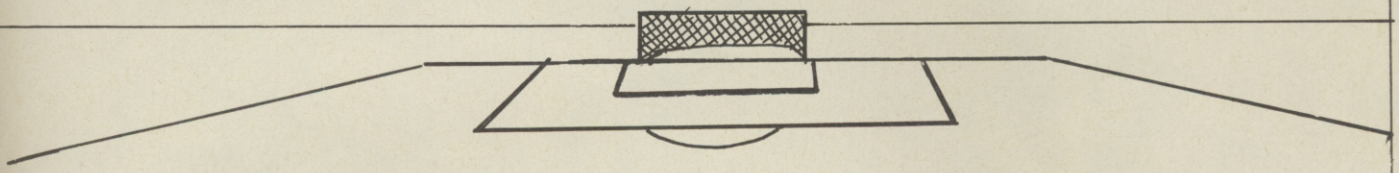
REVIEW

GARY LINEKER'S SUPER STAR SOCCER

Gremlin



Hot on the heels of Ocean's excellent Matchday II comes Gremlin's offering, with the advantage of endorsement from the magic Gary Lineker to boost its sales.

Starting in the fourth division, the object on the disk version is to play through nine seasons and cup competitions and come out on top. Before the joystick action gets underway, there are a number of options relating to the league and team status. Here you can view all sorts of tables to get an idea of who's who in the league and teams. New players can be recruited, and players can be traded. Another adjustment you can make is to send your team to a training camp.

All this is only on the disk version. If like me, you're mainly interested in the actual playing of games, this won't matter too much, but it's a bit of a shame because this Football Manager style strategic element has proven to be very popular in other games. (Yes, disk users do get all the luck!)

From here on, the cassette and disk versions are more or less the same. Before the game begins, a few options can be selected. The colour of the players, length of the game, and the control methods can all be set from an easy to use icon/cursor screen.

At the start, team strategies are selected from a few simple choices. This can be done by the player, or controlled by the computer. Decisions concerning whether to play an attacking or defensive game and so on will influence the way your team mates play.

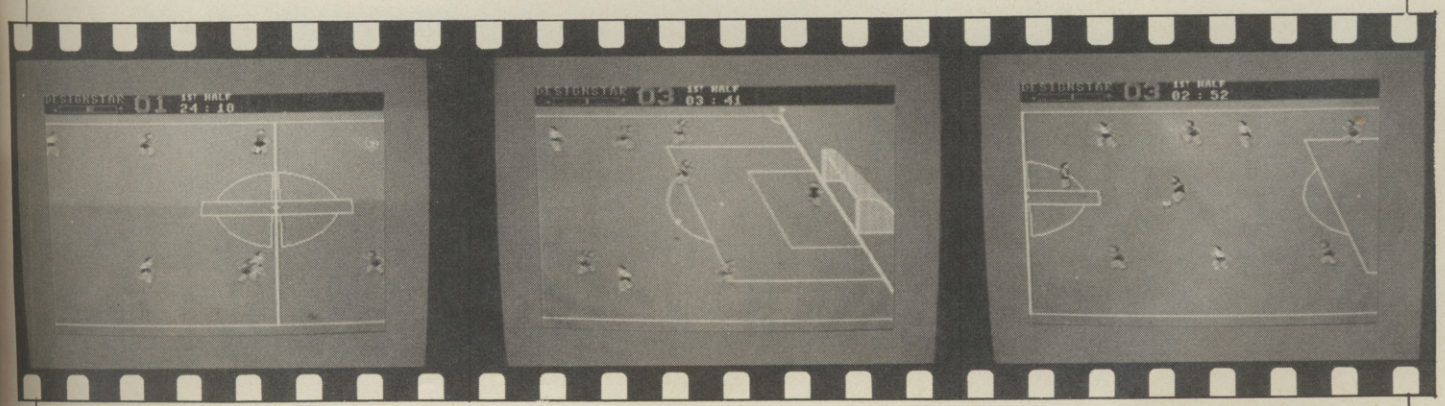
Throughout the game you take control of the centre forward. This ties in neatly with the Gary Lineker link, but it does mean that if you want to stay in the action, you'll have to run all over the pitch regardless of your proposed position. (Work rate!) The other option is to stay in position, and watch your incompetent defence and goalie stand around like lemons as the opposition scores. I much prefer the system used in most footie games in which you control the nearest player to the ball.

Something that doesn't fit in with the Lineker endorsement is the way that you can score from over the half way line! Quite the opposite of Gary's style.

The game plays a lot faster than Matchday II, but is slightly let down by a few annoying factors, not least because it seems not a good game with some alterations. As it is, it's merely average. The disk version certainly offers more in the way of strategy, but neither really make the grade.

Graphics: 76%
Sound: 45%
Playability: 52% (cass)
60% (disk)
Overall: 53% (cass)
60% (disk)
Price: £9.99 (cass)
£14.00 (disk)

T.H.



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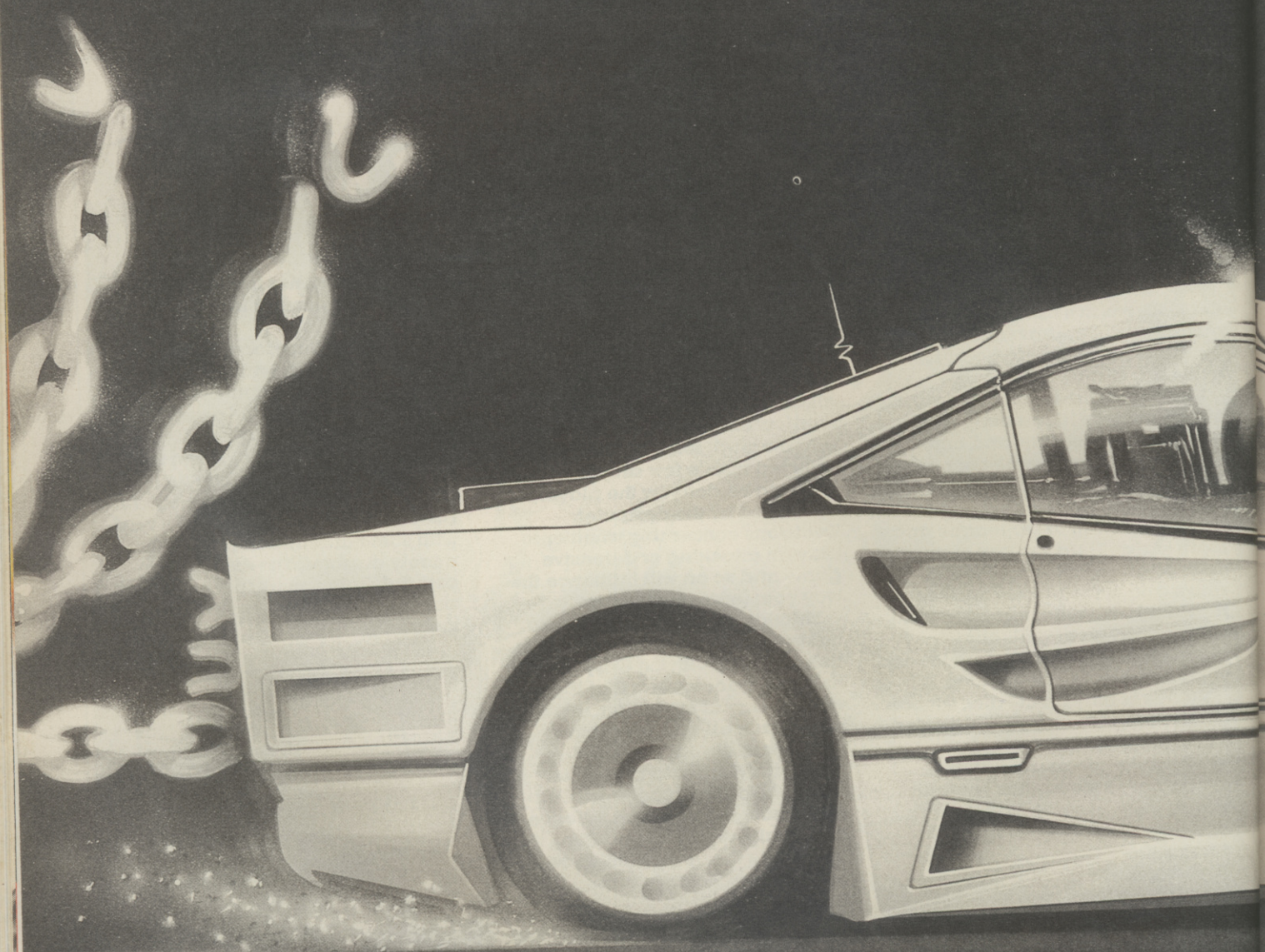

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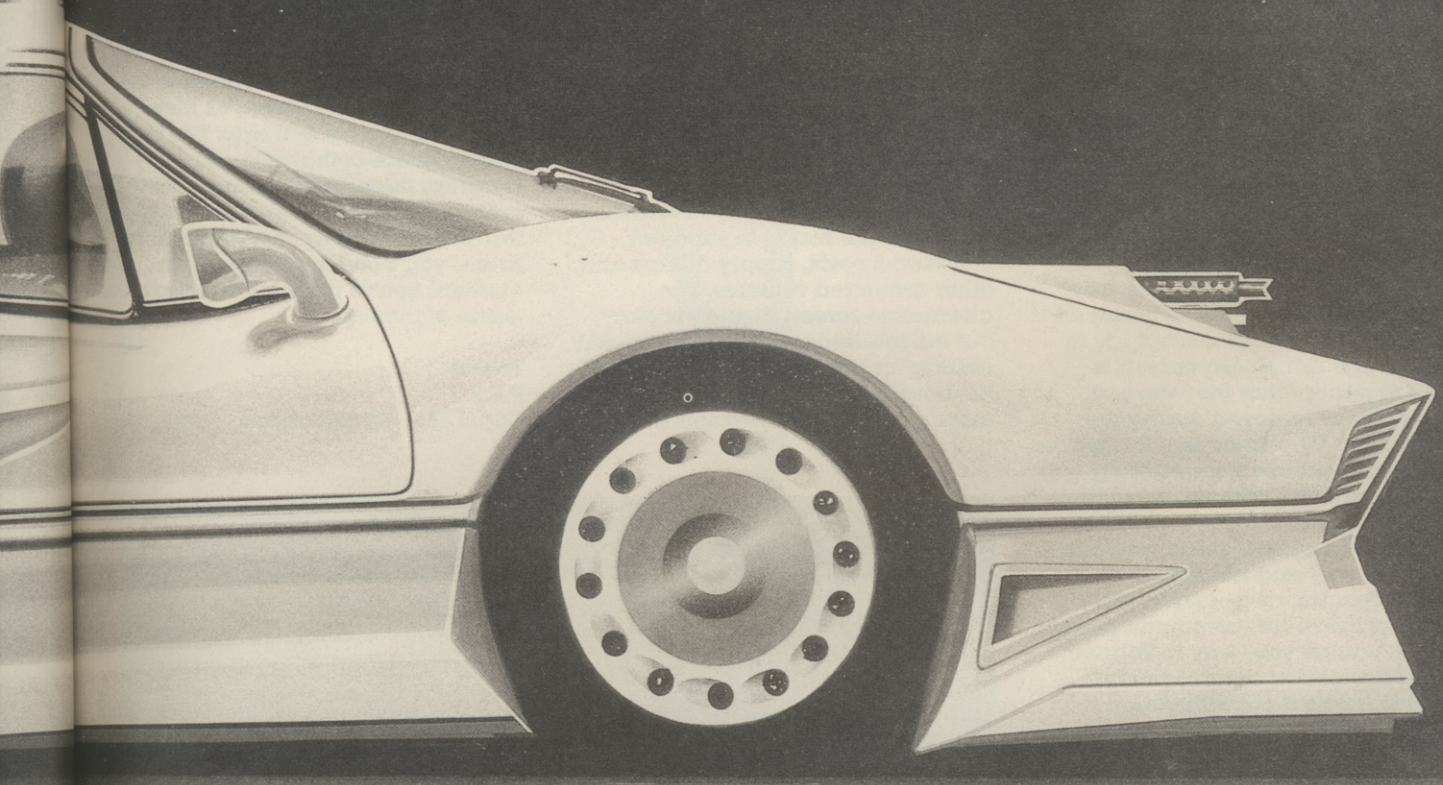

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TOBRUK

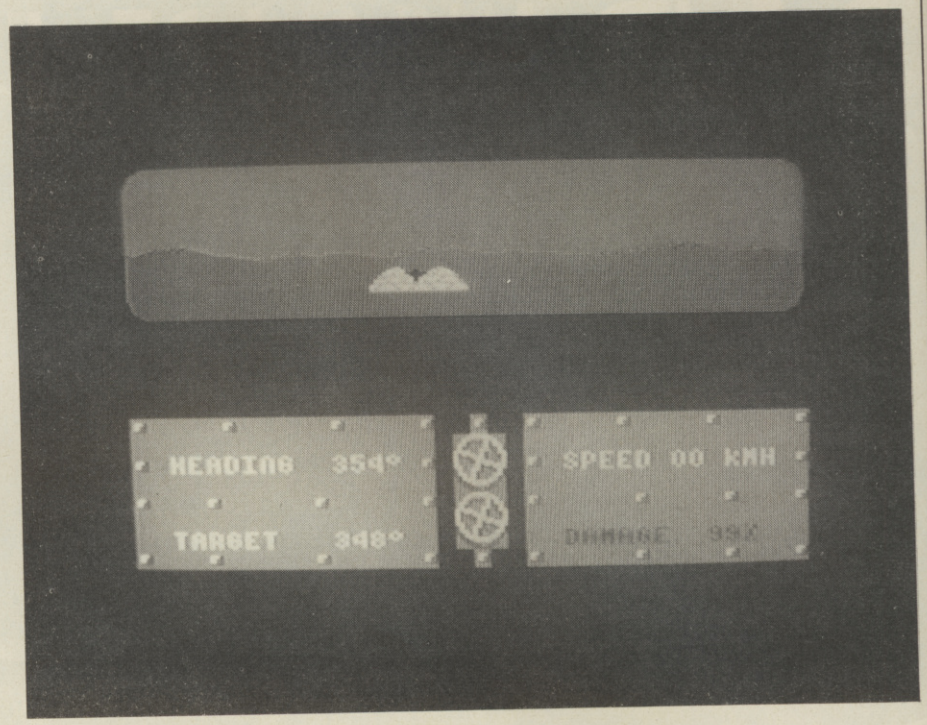
P.S.S.

IN its way, Tobruk from P.S.S. also attempts to be all things to all gamesters but does so much less successfully. As a straightforward strategy, it offers all you'd expect from a software house that has a well-deserved reputation for serving the small and probably not very profitable market among micro wargamers.

In a war full of remarkable confrontations and even more, remarkable victories, the events of Tobruk remain astonishing. Astonishing first that two totally European powers, one of them with virtually no experience whatsoever of desert warfare, should find themselves confronting each other in North Africa of all places; secondly, that their encounter should take the form almost exclusively of huge, savagely-extended, set-piece tank battles.

A key supply point and a gateway to victory in the Mediterranean, Tobruk changed hands no fewer than five times before its final capture by British and Commonwealth forces in 1942. The significance of the tank in that campaign, even given the huge air support provided by both the axis and allied forces, can be assessed from the 500,000 mines that lay in wait for the British armoury. It is hard to accept that they were all exploded or removed during the conflict, so Cyrenaica is not a place one would choose for a walking holiday and the camels must live on their nerves.

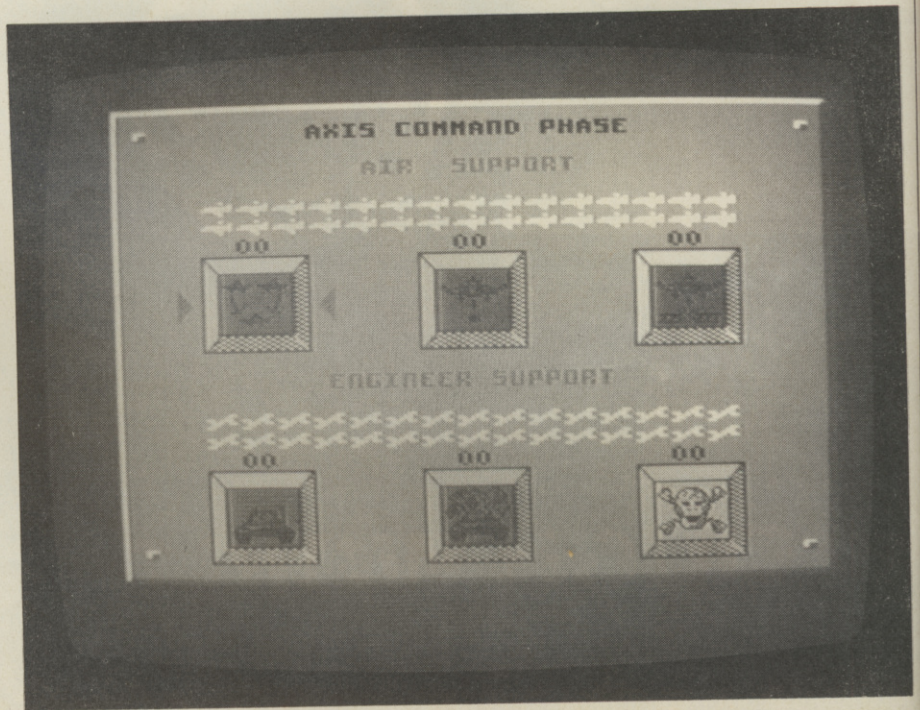
In the one-player game, you can kit up in grey and become the Desert Fox, intent on taking as many of the Allied command posts as you can on your way to Tobruk. In the two-player option, you first have to battle it out with your partner who'll Monty and who'll be 'Wommel' is intentional. Moving your armoured vehicles an allowable but limited number of screen places per turn over the playmap, making sure they are properly supplied, will soon have you close enough to the enemy to get into an assault phase. Your computer adversary will be doing the same (response is very quick, and plenty of on-screen prompts tell you what's happening), and some interesting situations — not to mention air attacks — develop quite quickly. With two players, the opportunities for deceit and bluff are limitless.



In a conventional strategy game, that would more or less be that, but Tobruk attempts to introduce an element of real-time, live-action from time to time by plonking you in a tank and sending you whizzing off across the sands to wipe out command posts, supply dumps and other armoured vehicles. The alternative screen display is okay, but the interludes of 'arcade action', calling for both joystick control and keyboard input, are woefully slow-moving, clumsy and boring — a bit like an early budget title before the Brothers Darling showed us they didn't have to be that way. The only saving grace is that you can progress through the game without going into the arcade mode, but that's a waste of an attractive idea. And if you don't make use of an element you've paid for, it's also a waste of money.

J.R.

Tobruk
P.S.S.
C64/128 — £9.99; disk, £12.95



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MEGAREVIEW

DRILL

Incentive

Incentive are a strange bunch. Most software houses tend to specialise in a particular field, but Incentive seem to have had a go at everything. Before now they've produced adventure games, an arcade conversion (Moon Cresta), Splat, Graphic Adventure Creator and now their latest project, Freescape. As most of you will know from our preview in the January issue (if not why not?), that the Freescape technique allows the creation of a "world" which can be viewed in filled-in 3D from any direction. Driller is the first game to use this system.

If you're one who enjoys reading through 30-page novellas, Driller will get you off to a good start. For those who'd rather get straight down to business, the basic idea is this . . . One of the moons of your home planet has been heavily mined by an outlawed group who has now left. A build up of gas under its surface presents a danger of explosion, and an asteroid on collision course threatens to bring things to an untimely end. The only thing to do is release the gas by drilling through the moon's surface. The problems arise when you realise that each pocket of gas is highly concentrated, and with one drill per sector, locating the gas is going to be tricky.

"Due to the way it can look up and down, tilt, rise and fall, it feels as if you're not in a vehicle at all, but some sort of alien with a three foot long neck!"

You start out in your excavation probe which has a tank-like appearance (not that you normally see it from the outside), which moves slowly, but is very manouverable. Due to the way it can look up and down, tilt, rise and fall, it feels as if you're not in a vehicle at all, but some sort of alien with a three foot long neck! During the moon's mined days, its surface was covered by a number of huge flat plates which have separated it into 18 sectors.

As you explore the first sector, it becomes obvious that the speed of the game isn't its strongest point. Incentive haven't done badly at all considering the amount of calculations and filling that needs to be done, but even so, the game does suffer a little from delayed response. The location of the first drill is easy; a big cross on the ground demands little mental taxation. Later sectors contain clues such as two arrows directed at the correct point or numerical clues.

A bit of zapping has been included for the trigger-happy puzzlers amongst us, but your laser has more uses than taking out defence towers. Switches throughout the game change the scenery when shot, sometimes very obviously, but some will seem to have no effect until a lot of progress has been made. One of the more useful puzzles to solve is a logic problem that enables a series of teleports. Exploring a hanger reveals a reconnaissance jet ('a spaceship to you, guv') which can be flown around to get a better view of things.

A powerful atmospheric soundtrack adds to the sci-fi atmosphere created by the graphics.

ER

"Incentive haven't developed Freescape and stuck it into any old game, but have carefully thought out the puzzles"

Driller could have easily been just another over-hyped disappointment, but has been saved from such a fate because of the design that has gone into Driller as well as the Freescape system. That is, Incentive haven't developed Freescape and stuck it into any old game, but have carefully thought out the puzzles. I can't pretend that everyone will like Driller, I know for a fact that some will positively hate it, but if you think you'll like it, you're probably right. The price is a bit of a surprise; £14.95 on cassette and £17.95 on disk. When the going rate is £8.95/£9.95, five quid extra is asking a bit much. Driller won't be of particular interest to the ten minute zapper, but even at this price anyone with time and patience will find it well worth their while.

Highly recommended.

T.H.

Graphics: 83%
Sound: 88%
Playability: 82%
Overall: 78%
Rating: MEGA

Looking for a good fairy . . .

CONTINUED FROM PAGE 71

mechanics of typewriters were still crude and some way had to be found of slowing down the nimble fingers of typists so the machines could cope. We're still stuck with it today. Wouldn't it be grand if the QWERTY interface could be vastly improved in time for next Christmas?

Admittedly, there have been attempts at alternative keyboards — one weird, dish-shaped device and of course the handful of keys offered by the Microwriter, but I'm waiting for the all-singing, all-dancing human interface. The cheap, hand-held scanner is already with us, voice recognition is coming along nicely thank you, and the WIMP environment does much to make computing less painful for the majority. We're still a long way away from a truly user-friendly machine, even so.

I'd like a Useful Computer, a computer I could talk to next Christmas (not just stare at). A computer that I could give dictation to, that could be controlled by voice commands and be used to control other devices according to my orders, a computer that could 'read' notes I jotted down on the train. Such a machine could spawn a host of useful Applications (other than databases, spreadsheets and word processors) that were rather more relevant to the home environment. That machine would really impress Auntie, and I'm sure she'd begin to see how useful computers could be . . . Who knows, with a little help from my fairy, transputers could be hurried along and my Useful Computer could make Christmas.

Wish number two

A fairly simple one really. Having got hold of my wondermachine, I'd like to see British Telecom, or maybe even Mercury, make more money than they do already. Not by raising charges, but by lowering them and increasing traffic. They could latch on to a ten year old idea, give away free modems and Prestel terminals and get the wired society we live in really moving.

Think about the crazy situation we're in. A telephone line goes into just about every household in the country and what's it used for? Yes, it's a vital link to the outside world in case of emergency, but domestic emergencies, thankfully, aren't daily events in every household. So we use the telephone to ring Auntie to enquire after her health and temper, to phone out mates and fix up Saturday evening, or maybe to get stung 38p a minute to vote in the SUN's latest poll . . . Pathetic, really.

Using a fax machine, an A4 letter can be sent almost instantaneously, and with a few exceptions, it costs less to fax a letter than it does to bundle it up in an envelope and send it off in the post. And we all know the dealys that can be involved in sending things through the mail. A letter of confirmation, a contract or indeed the mythical cheque may well be 'in the post', but all you can do is wait for it. If that letter has been faxed to you, it's either waiting in the fax machine or it ain't been faxed buster . . .

If I could have my first wish, I'd like to consolidate my position with my second wish I'd like the Useful Computer to be as commonplace as the television set, and I'd like it to be plugged into the telephone line. I'd like the phone company to get their act together, and make more money by encouraging more people to use their services by lowering charges. I'd like to see serious quantities of data whizzing along private telephone lines as well as idle banter.

Look what Alan Sugar managed to achieve in the worlds of home computing, word processing and business computing over the past couple of years. We have the technology for E-Mail, bulletin boards and viewdata; no doubt Mr Sugar or a similarly demand-driven businessperson could provide us with the equipment at a much more affordable price. But the private user isn't going to get on-line and stay there until the running costs are lower.

Businesses are rapidly discovering that going on-line for communications makes economic sense; they save money, or save time which amounts to the same thing. Private individuals are already a bit wary of telephone charges — think about it, your telephone bill is about the only bill that you pay without getting the opportunity to check that you've been charged for what you've had . . Free local calls would be great, free cheap rate calls for private individuals would be even better, especially if a free Prestel terminal or a modem were thrown in as well . . .

Wish number three

Assuming that my fairy is working to rule and that the Professional Organisation Of Fairies outlawed the 'three more wishes please' dodge years ago. (Several of their members were condemned to eternal toil, fulfilling wishes for sassy individuals.) Assuming this is my last wish, I'd go for Niggle Removal.

There's lots of little, niggly things about the world of home computing that I could do with having sorted out in time for next Christmas. For instance, I'd like to seen an end to the 'my computer's faster than your computer nyah nyah' argument that benchmark tests do so much to perpetuate. Does it really matter — or more importantly, are benchmarks really a relevant reflection of what computers are used for in real life? No it doesn't, no they're not.

I'd like to know if someone's going to replace Alan Sugar in the way that he replaced Clive Sinclair, and I'd like to know NOW because I'd love to hear his or her plans. Sir Clive made the affordable, mass market home computer, Alan Sugar made the affordable, mass market home computer useful and 'sensible' and got many more people into the computer shop. No disrespect, but perhaps evolutionary theory dictates that it's someone else's turn now . .

I'd like to see Shareware catch on. It seems the ideal, pragmatic solution — a halfway house maybe between piracy on the one hand and overpriced, under-performing commercial packages on the other. For the Shareware concept to really work there'd have to be a fairly fundamental shift in the human way of doing things, and that in itself would be a pretty good spin-off from this set of wishes . . .

I'd like to see the Amiga catch up with the ST on price and popularity, I'd like . . . oh, yes the Rulebook. One more little, teensy wish. Please? Just one, before you go? Thank you . . .

I'd like to know exactly who was responsible for the Amiga Virus.

G.K.

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Charts

So it was Outrun after all! The big end-of-year smash hit whizzed around the tracks up to the number one spot with an acceleration nothing could match — not even the outstanding Combat School. Ocean's top game hung in there at Number Two but Outrun outrran it to what is reputed to be a quarter of a million sale in 10 days! That's already the equal of last year's US Gold biggie 'Gauntlet'. But Ocean had the largest number of hits in the top ten — four including what looks like being the top soccer game of the year: the awesome-rated Matchday II. The US Gold/Ocean combine dominated the 64 chart with eight out of ten. Some record!

Only the Sensible Software's Shoot 'Em Up Construction Set and Microprose's Airborne Ranger held out against the dominant force in U.K. Entertainment software.

For the Budget Chart Grand Prix Simulator holds onto first place with Firebird's Back To The Future back in the present. There's a real breaker on the Amiga score with Microdeal's lightning-fast Insanity Fight smashing in at Number One. Grand Slam's Hunt The Red October climbs a place and Melbourne House's Feud enters into the top five. Watch out for Arkanoid!

C64

GAME TITLE	COMPANY		Price (£)	Rating
1. Outrun	U.S. Gold	★	8.99	Crisp
2. Combat School	Ocean	↓	8.95	Awesome
3. Solid Gold	U.S. Gold	↓	9.99	Awesome
4. Matchday II	Ocean	★	8.95	Awesome
5. Game, Set & Match	Ocean	★	12.95	Mega
6. California Games	Epyx	↓	9.95	Awesome
7. Shoot 'Em Up Construction Unit	Outlaw	→←	14.95	Awesome
8. Live Ammo	Ocean	↓	9.95	Crisp
9. Airborne Ranger	Microprose	↓	14.95	Mega
10. 720°	U.S. Gold	↓	9.95	Crisp

Budget

1. Grand Prix Simulator	Codemaster
2. Arcade Classics	Firebird
3. Kikstart II	Mastertronic
4. Back To The Future	Firebird
5. Soccer Boss	Alternative

AMIGA CHART

1. Insanity Fight	Microdeal
2. Hunt The Red October	Grand Slam
3. Impact	Audiogenic
4. Terrorpods	Psygnosis
5. Feud	Melbourne House

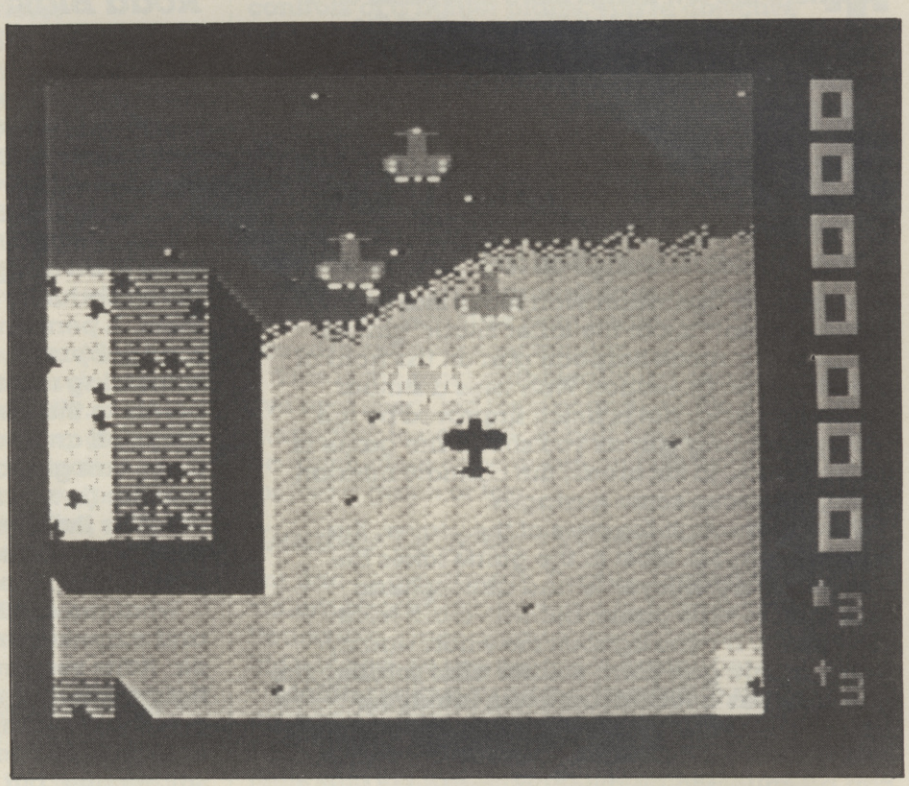
★ NEW ENTRY

C64

IFFY

FLYING SHARK

Firebird



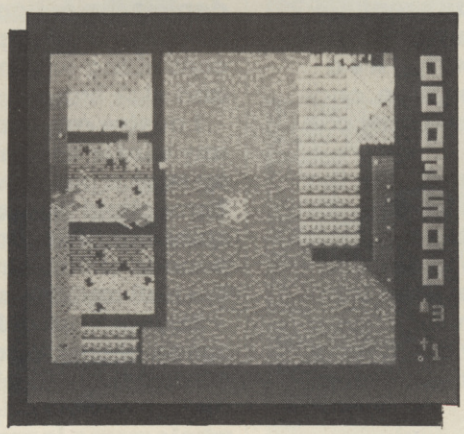
Most arcade games these days have elements of earlier games incorporated in them, but Flying Shark goes a lot further than most, and is almost a direct copy of Capcom's 1942. 1942 was never one of my favourite games, and consequently, Flying Shark has done little better in my books.

The game takes the form of a vertically-scrolling blaster, with a World War II flavour. The object is to pilot your Flying Shark on a solo mission into enemy territory and win the battle for your side. Flying your plane over land, sea, jungles and villages, the screen scrolls at a constant speed bringing with it groups of attacking enemies. In this game, it's shoot or be shot. The attack patterns can be learnt, but even so, getting past the first level proves to be very hard, too hard in fact. Only the best of players will be spared a lot of frustration. In its favour, there is the option to continue on the last level reached, but this doesn't make getting, there any easier.

If this had been released about a year or more ago, it would probably have got a much better review, but because so many similar games have come out, the quality of which has been just as good, it doesn't make the grade today. Not only have there been a lot like it, many have been a good bit cheaper.

One thing in Flying Shark not often seen is the background which is slightly wider than the playing area, the scrolls horizontally slightly. Apart from this, it has nothing new on offer. A two-shot cannon can be slightly up-graded, but never gets a really decent arsenal. Bombs can be used to better effect than the cannon, but these are limited in number.

You may be thinking by now that it's a right load of rubbish, but it isn't really that bad. The game itself is OK, it's just that it's time software houses stopped converting games like this that hold limited hope however the conversion turns out. The programmers could have done a bit better, but in my view, the conversion had very little potential in the first place.



One last gripe: each level is loaded separately, which doesn't break up the action too much on the disk version, but on cassette could be a pain.

As far as graphics go, Flying Shark is above average, but not by much. The sprites are remarkably like those of 1942, and the backgrounds vary from good to dull. Apart from one, the sound effects are simple, and the music tends to annoy. If you like the coin-op, Flying Shark could be worth your while, but most others will find they've done it all before.

T.H.

Graphics: 66%
Sound: 52%
Playability: 60%
Overall: 47%
Rating: IFFY
Price: £8.95 (cass)
£12.95 (disk)

Feature

Coin-op Countdown

There are few things more enjoyable on a rainy bank holiday than a day at the arcades. Armed with a pocket of ten pees, fortified with a big mac (minus gerkhins), and a taste for adventure, Tony Horgan, intrepid CCI reporter, braved the elements of a hurricane-swept Brighton sea-front to bring you this up-to-the minute progress report of what the hot cooking is in today's coin-op kitchen.

Operation Wolf (Taito)

At a glance, Operation Wolf looks like one of those ancient "shoot the killer shark" games which had a mock harpoon gun on the front of the machine. Operation Wolf uses a similar control method, but is much improved by the wildly vibrating gun as you shoot. The game is played through six areas, the ultimate mission being to rescue some hostages.

Viewed through the eyes of the player, the display is in 3D. Most of the game takes the form of a very enjoyable and atmospheric Commando-type game, but with a different view-point. It's you against the whole enemy army, as you gun down soldier after soldier. The gun also has a rocket launcher, handy for dealing with those hard nut tanks. Both rockets and bullets are limited in number, and refills can be collected by shooting cartridges found in the game.

Sound effects add a lot to the game, as do the graphics which are very good. I love the way the enemies sneak up and present themselves a couple of feet away with a gun aimed straight at you. Some excellent animated title screens and frantic gameplay all add up to a surprisingly good game, well worth a shot.

Guerrilla War (SNK)

Although not a bad game, Guerrilla War without a doubt comes in the "Clones" category. The game is really Ikari Warriors with different graphics, and even these are in the same style. For one or two players (simultaneously), it's a vertically scrolling jungle warefare game, once again it's you against what ever the enemy can throw at you.

As with Ikari, the control is with a joystick that also rotates in eight positions. This enables the players to move in a direction, facing in another. Along the way, you'll have to defend yourself against guerrillas, and can jump into vacant tanks. Extra weaponary can be built-up as the game goes on. Even the way the players can wade through rivers has been copied from Ikari.

Neither graphics or sound are particularly impressive, but adequete, and although very derivative, it can be good fun with two players. The controls are tricky at first, but once mastered, Guerrilla War could prove fairly enjoyable.

Road Blasters (Atari)

Although not that new, Road Blasters is definitely worthy of attention. The familiar 3D view of the cars and road are employed, and it really only has a few new ideas, but these show how much life there is in this game style. The object is simply to reach the end of each road, fuel being the limiting factor instead of time.

In most games of this type, opposing cars have to be dodged, but Road Blasters gives you the opportunity not just to dodge them, but shoot them. A permanent cannon disposes of most road (ab)users, but some are tough, and need something more to get rid of them. At regular points in the game, a plane flies overhead and drops off an attachment for your car. If caught, these can give a rapid fire machine gun, a nitro injector (a very fast turbo charge), or cruise missiles that fry anything on screen. Fuel pods have to be collected, and zebra-crossings driven over to keep the tank topped up.

What makes the game what it is, is its speed, and more importantly, the car's cornering. The car turns very smoothly, and can always steer tight enough to round a bend. Unlike other games, you can over-steer and go into a spin even at the fastest of speeds. It may sound a small point, but it really improves the game. If the same feel could be reproduced for home computers, it would make an excellent conversion, which would work especially well on 16-bit systems with mouse control. It doesn't look much, but give it a chance and you'll be greatly rewarded.

World Cup (Tekhan)

Another of my favourites which has been around a while, but not recieved much attention is World Cup. This soccer game is miles ahead of any of it's rivals in my book. A bird's eye view depicts the action on a multi-directional scrolling pitch. One or two people can play, controlling one man at a time with a trackball and kick button.

I advise anyone about to play this to take off any winter woolies or jackets. I've never worked up such a sweat with any other game! Throughout the game, it's non-stop mad spinning of the trackball, as you burn off pounds of flab, and pinch you hand between the ball and the console until it bleeds.

Strengths of kicks are determined by the speed of the trackball, and accurate direction control is easily obtained. Slide tackles and diving goalies add to the realism, and the whole game is very competitive. Good with one player, excellent with two, which again would make a good conversion if the control method could be recreated well for home computers.

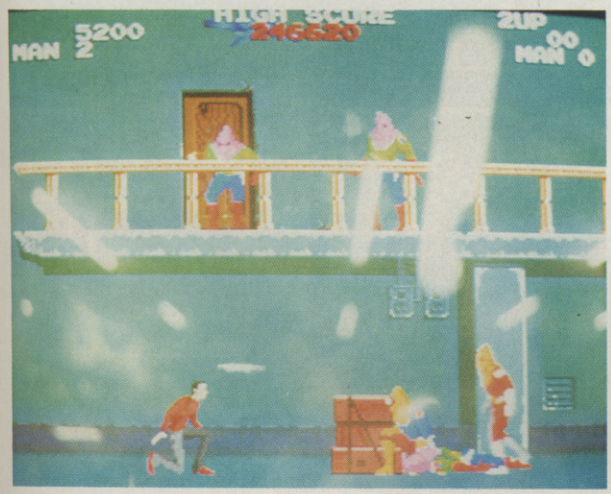
Rolling Thunder (Namco)

My favourite game after Out Run has to be Rolling Thunder. It may not be particularly eye-catching, but once you play a game, you'll be instantly hooked by its abundant clever touches. You're a top Rolling Thunder agent, on a mission to rescue your girlfriend from the evil clutches of an evil green wrinkly man.

Starting in a warehouse, the game generally scrolls from right to left. Between you and your goal are many foes dressed in Bananaman costumes. They are excellently drawn and animated, and create a superb atmosphere as they prowl up and down, looking around for you. Later stages introduce new baddies which are just as good looking.

The warehouse has two levels, and jumping up and down between them, your character vaults over the hand rail very realistically. Entering a particular door along the way gains you a small machine gun to hot up the action. Another of its brilliant touches is the way the enemies are thrown back by your gun-fire, and let out a superb sampled groan of pain.

US Gold's conversion is due out soon, and I'm really hoping they don't bodge it. If it's done right, it should make one of the best conversions ever.



Pacmania

In its day, Pacman was a great game, but was outdated years ago. To my surprise Pacmania isn't anything like Pacland, but really a variation on the original Pacman. There are two main differences: the maze is displayed with a 3D slant, and Pac now has the ability to bounce over the ghosts.

In terms of gameplay, Pacmania is very similar. Maze clearance techniques are more or less the same as those of Pacman, but tight spots can be escaped by bouncing. Of course, the graphics have been improved, but I didn't really find it that interesting. When compared to the other games here, it just seems simple, and a lot less exciting. I don't doubt that some will find it more enjoyable, but it does come on as rather dull.

Afterburner (Sega)

Sega's successor to Out Run continues and improves upon the 3D graphics that have become their trademark of late. Taking to the controls of a fighter plane, you're objective probably has some story behind it, but is really to survive as long as possible, and shoot down enemy aircraft.

At a quid a time, it's not cheap, but the top of the range version includes a cockpit with hydraulics to simulate the G-force. Flying over jungles, deserts and seas, the 3D graphics are unbelievably fast and smooth as they appear from the horizon, and disappear behind you in a flash. Enemies approach from in front, and also swoop into view from behind. Explosions are also suitably spectacular.

This is the most graphically impressive game I've ever seen, but for a pound, a little more gameplay is needed. At half the price, it would be much more acceptable, but it's worth a quid for just a game or two.

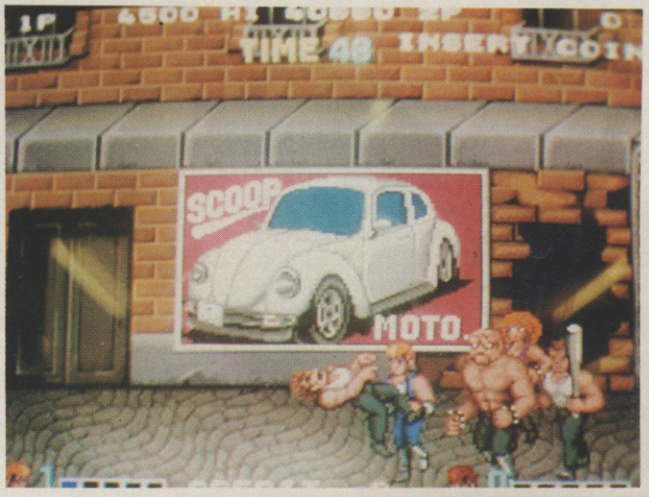
Double Dragon (Taito)

For one or two players, Double Dragon is a violent street fighting game in a similar style to Renegade. Once again your girlfriend has been kidnapped, so you set out to resuce her.

Making your way along from left to right through the city, you'll encounter gangs of all sorts to be dealt with. With a second player to help you, the first few can be beaten up with your bare fists (and feet). A little way along, you come to an empty area. Suddenly, a seven foot tall muscle man smashes through a wall with his weapon-weilding companions. Stunned fighters drop their weapons which can be picked up and used against them.

The wide variety of moves, and ability to manipulate objects, together with the two player mode make Double Dragon a very enjoyable game. Animation could be better, but the graphics are excellent, as are the sound effects. Double Dragon comes highly recommended.

T.H.



C64

CRISP

CAPTAIN AMERICA

Go!

Of the recent comic/film licensed computer games, Captain America struck me as one with a lot of potential. The exploits of a starred and striped super hero give bags of scope for an entertaining game. With this in mind, I loaded it up hoping for something a bit special.

I started to read the instrutions as it loaded. A few paragraphs later I was too bored to keep reading, and started playing. The next four hours were spent referring back to the very long-winded instructions which double as a storyline, making it hard to understand the game. If they had taken a leaf out of Discovery's Amiga Arkanoid inlay, and depicted it all in comic strip form, or simply made them a lot more concise, it would get off to a much better start. I'm sure others will agree, and it's not just me being impatient.

When you realise what it's all about, the game does become very much more enjoyable. Dr Megaloman (great name that!) has invented a bomb with which he plans to kill off America unless the President hands over power to him. You, as Captain America, must find and destroy this bomb.

Dr Megaloman is hiding out in a sub-terranian structure known as the Doom Tube. This is divided into five levels, with four rooms or quadrants in each. A variety of aliens defend the tube. These can be zapped with your trusty shield that returns to your arm like a boomerang.

The quandrants are large platforms, so there's also the danger of falling off the edge. This isn't helped by the dodgy collision detection. Some quadrants can be used to find out parts of the code to get to the bomb. All these have a level of toxicity. Captain's immunity level has to be at least as high, or he'll be poisoned.

Selecting different levels is done by moving Captain's hand around the control panel. Pushing buttons giving information and clues on the levels, and a lever moves between levels. This is well done, and above the overall standard of the game.

It's certainly very attractive to look at, as it should be coming from a comic. The backgrounds are perhaps a little underdeveloped, but some of the sprites are well drawn and excellently animated.

The optional music has some really good sounds, but is a shade too repetitive to listen to for long. The FX are not new, but of a high quality even so.

Captain America looks like a well programmed, fast action game, but playing it you notice a few weaknesses. Running out of shields to throw at aliens happens too often, and means you have to restart. The innaccuracy as Captain reaches the edge of a platform also makes the game a little frustrating.

However, Captain America must be said to be rather original, and deserves praise for this. With improved instructions, and more varied gameplay, Captain America could have been a really first class game, however, it just falls short of its considerable potential.

Graphics: 78%
Sound: 79%
Playability: 52%
Overall: 60%
Crisp
Price: £9.99 (cass)
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INTER GALACTIC HAVOC! A METEORIC MAD HOUSE! IT'S SPACE AGE.....

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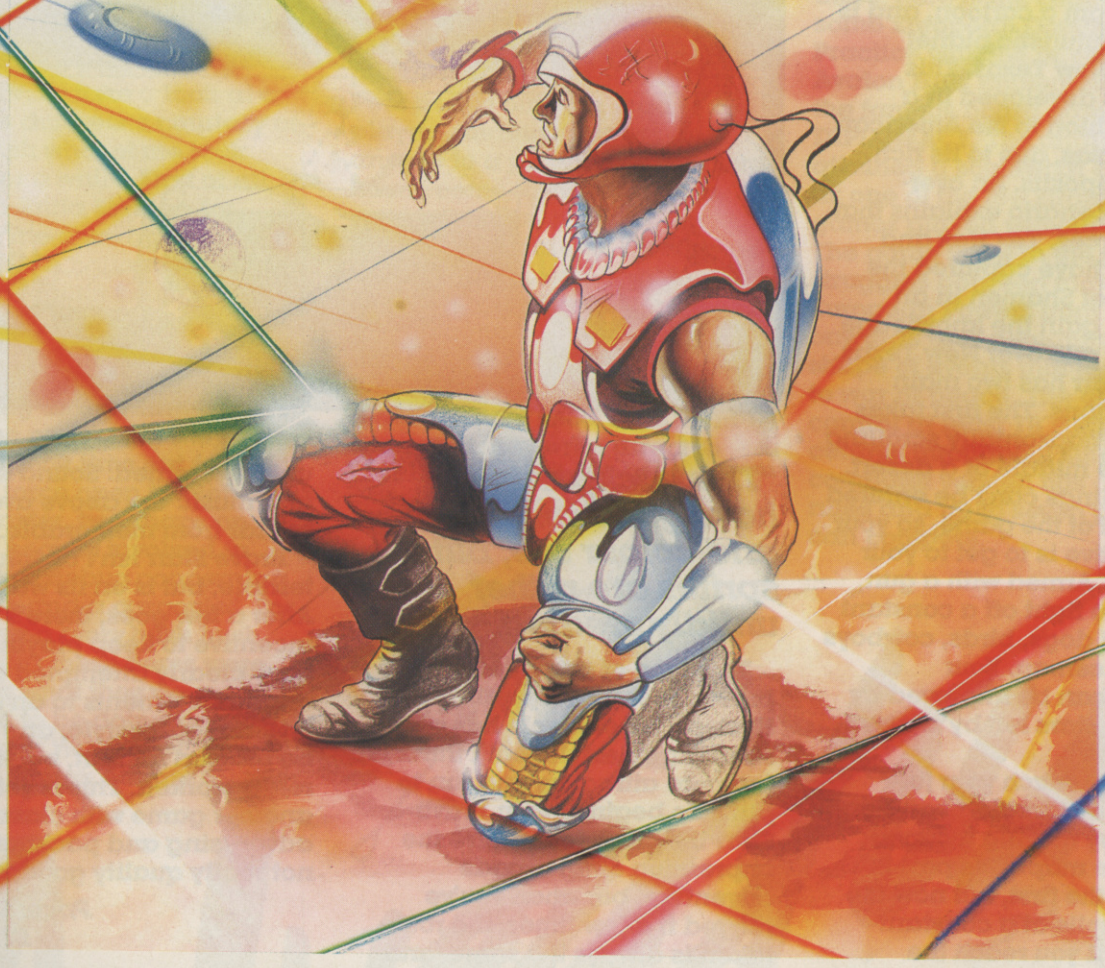

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C64

IFFY

Brave Starr Starr Starr

Go!

For a new label to gain credibility, the quality of its first games are very important. So far go! has not achieved outstanding success. Brave Starr is its latest release.

I take it that Brave Starr is licensed from a cartoon, and is set on the futuristic planet known as New Texas. This planet has developed in a similar fashion to the American state of Texas, due to its rich mineral deposits. An over-complex scenario explains that two evil forces. Tex Hex and Stampede have captured the indian chief Shamen in an attempt to gain the knowledge needed to rule over New Texas.

Brave Starr has two main game sections. The first takes place in a horizontally scrolling town in the middle of a desert. Most buildings can't be entered at the start of the game, so your first objective is to get to your jet-saddle. Armed with a gun, you have to fight off a constant barrage of dogs, birds, cowboys and a spaceman. Your firepower can be improved by collecting stars left by zapped nasties.

When you reach your jet-saddle, a destination can be selected by moving a cursor around the map. This part is similar to the first, but now the screen scrolls at a constant speed until you reach the destination. Each time you find clues by exploring somewhere new, be it in the town or in the surrounding desert, a new location appears on the map, or a door opens somewhere.

"The backgrounds have good resolution and colour use, but the sprites are rather untidly created."

This type of game has been proven to work very well, Hysteria for example has a similar gamestyle, but I think is far more attractive and fun to play. To begin with in Brave Starr the clues found give the impression of an arcade adventure, but when you've played it a few times, the route taken is always the same, and death comes along at almost the same point every game.

There is in some variation in the graphics. The backgrounds have good resolution and colour use, but the sprites are rather untidly created. Sound effects and music are above average, but far from memorable.

Brave Starr isn't absolutely terrible, but is on its way there. After a few goes, there's little incentive to keep playing. Probe have clearly attempted to add original elements to an un-original gamestyle, and should be praised for that, but it hasn't really worked. This is yet another game with classy advertising and packaging, but not really quality goods.

Price: £9.99 (c)
£11.99 (d)
T.H.

Graphics: 68%
Sound: 59%
Playability: 37%
Overall: 48%
Rating: IFFY

Adventure

BY ANDY MOSS

COMMENT

Welcome again my friends to that corner of CCI that means tale or two of Adventurous deeds, and quite a month it is too. As if a New Year's resolution were to bring out more adventure software, I have been swamped with new releases to review for you. Not that I am complaining, who can complain, when you think that this month we have JINXTER, BORDER ZONE, GNOME RANGER, two readers adventures entitled THE ASTRODUS AFFAIR and SOUP THE CASTLE and NOT A PENNY MORE from Domark to name but a few? As we have come to the end of our Zork trilogy series of maps I thought that this months map could be built around ULTIMA IV, so take a look at a few of the dungeons courtesy of Lord British who let me look around for a while. First of all thanks to Anita Sinclair for allowing me once again to enter into the hallowed halls of Magnetic Scrolls for a preview of Jinxter, and a chat about life. I must say, that they were all hard at it, coding, compiling debugging and writing no less than three projects at the same time. As I took time out from trying to force open the letter box in Jinxter, two chaps on my left were heavily involved in some major debug concerning a "chalice and a gargoyle". For some reason (very hush hush apparently) these items were not doing what they were supposed to be doing because "the coffee's not made". There followed a hugh debate to establish why the said Gargoyle was actually listed in the players inventory and obviously proceeding to kill the said player instantly! All quite fascinating and all, I'm reliably informed will be revealed at a later date to be announced.

Urgent message from Level Nine

Pete Austin has a serious message to all of Level Nines' customers who have purchased Knight Orc. He has asked me to tell you that there has been a "falling out with Rainbird" over their Hint Sheet. It transpires that Rainbird after taking note that Level Nine usually provide comprehensive and disguised hints in the form of numbered clues with numbered solutions, have taken it upon themselves to produce their OWN version which just lists out all the main puzzle solutions in order. This, Pete points out, can lead to the player stumbling across an answer to a puzzle that he or she hasn't come to yet, and goes against all the adventuring principles that Level Nine stand for. Now, I do not intend to get involved in any argument that Level Nine may have with Rainbird but am just forwarding Pete's wish that should anyone require a clue sheet for Knight Orc could they write direct to Level Nine at Box 39, Weston Super Mare, Avon BS24 9UR.

ADVENTURE NEWS

Next infocom release

Following the release of Borderzone and Beyond Zork there is news of the next bit of magic from the boys at Mass. SHERLOCK — THE RIDDLE OF THE CROWN JEWELS is an adventure in a new "Series of Immortal Legends". You play the part of Watson and through your confering with the great Holmes, decide upon the solution to the mystery, which rests in your very hands!

Virgin go diplomatic

For all you meglomaniacs out there, here is the chance for some European Domination Practice with the release of Avalon Hills implementation of the famous board game DIPLOMACY. The original game attained a somewhat cult status, as one of the few strategy games played without a dice. The game is set in the political struggles between major European Powers from 1901 onwards and determines the shape of events that lead either to war or peace. The aim is to control at least 18 supply centres throughout Europe. The computer version has additional rules and up to seven players can compete.

CONTINUED ON PAGE 94

Adventure!

CONTINUED.....

MAILBAG

Some handy hints for TWIN KINGDOM VALLEY have come in following my hint in October from Ian Cunningham.

Dear Andy
I think you misunderstood the queries in Twin Kingdom Valley as the witch in question is in the east tower. To get the staff of gold you must first have the silver dagger found in the second wooden cabin. If possible get the giant to accompany you to the tower, then as long as your strength is high, enter and hit witch with silver dagger. The result will be the same as other weapons, but the giant will take a lot of the damage instead of you. Repeat this command until the dagger falls, the witch will pick it up prick herself on it and get poisoned. You can now get the staff of gold. As for the silver key, just ask a passing elf.

My problem is I cannot read the secret of Life. I have scored 864 points so how can I finish? If S Hector of M Powell need anymore tips I will gladly help out.
Ian Cunningham Derby

Thanks for your letter Ian, I am sure that Mr Powell's marriage has now been saved by your generous tips. TKV was a game that graphically was very pretty but did not do enough for me to persevere with through to the end, so is there anyone out there who can help?

Dear Andy
I own an Amiga 500 and have Kings Quest III. In the adventure I have got chicken feather, fly wings, rose essence, mandrake root, toad spittle, bowl, empty cup, bread, mutton, fishbone powder, toadstool powder, knife, spoon, mirror, fruit. When I go to the desert and I try to use the mirror against the Medusa I can't. Also when I try to collect ocean water for a spell I am told it is of no use, I cannot find the magic wand, and cannot cut the spider's webb. Please can you help.
Yours sincerely
Norman Stone Essex

Well, Norman that is one adventure that I have NEVER PLAYED!!! Shock horror. However I am sure that there are CCI adventure readers that have. So, who can help Norman? Answers please for a fellow adventurer in trouble.

ADVENTURE REVIEWS

Not A Penny More Not A Penny Less
Domark £14.95

It was not so long ago that Domark were heralded as the kings of hyped rubbish and not a lot else after such gems as Friday the 13th and alike. Then they started to get into the big time, and produced a few interesting releases. Well folks its all the way back down the hill into the mud with Not A Penny More Not A Penny Less. I haven't seen such a heap of rubbish since The Great Space Race and that is saying something. The press release states that "Domark have developed a new way of computerising novels and this is the first book to be given the full treatment using the new approach . . . ."

If the "new approach" is to get you to shell out £14.95, bore you to tears waiting for the pathetic graphics to draw and fill in on screen, astound your ears with digitised speech so bad that it sounds like a dalek with a sore throat and a parser that is so awful that it doesn't even understand Inventory then I can do with out it thank you very much. The only saving grace in the whole disaster is the book comes with it, but you are better off buying it in your local newsagent. Sorry, I refuse to even tell you about the plot, this is not a computer adventure, it's a farce. Do not waste your money.
PERSONAL RATING 0

Jinxter
Magnetic Scrolls £19.95

First things first, Jinxter is not a classic. Before that statement starts pens scratching onto paper in abject horror, let me also say that it wasn't designed to be. They do not want to just make serious adventure software that takes months and months to finish, they also want to entertain and if that means releasing a fun game, that is easier and light hearted, then so be it.

Jinxter is fun, the puzzles, while not as hard as say an Infocom advanced level or a Level Nine biggie, are nevertheless brain teasing and still give a lot of satisfaction in cracking.

The main features of Jinxter are that killing is a no no. You cannot be killed or injured for one thing, and if you do get stuck there is help at hand in the shape of a curious character called The Guardian, who pops up when you come to a halt and gives you a bit of advice. One word of warning though, each time you get this touch of wisdom, your luck percentage will diminish. This may not sound too bad until you find out that the very last puzzle in the game requires you to have all your luck so be warned. The trick is to find out the route through and then start again to be able to finish.

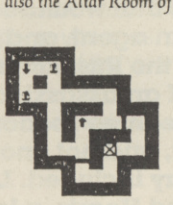
The story of Jinxter is set in the land of Aquitania (not a million miles from Kerovnia) and describes events when lady

The Way of the Avatar

A Guide to Ultima IV

Deceit:

The dungeon Deceit can be found on a small island off the coast of Dagger Isle in the northeast corner of Britannia. Indeed it is a temple of guile, in which little is as it seems. Gold may be found in abundance on the 4th Level, but beware of the Mimics found in these depths, for they take on the appearance of chests in order to lure hapless explorers close, then they treacherously attack. The blue stone may be found in the dungeon Deceit, somewhere on the 7th Level. Seek ye also the Altar Room of Truth.



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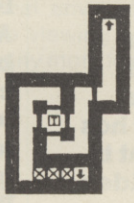

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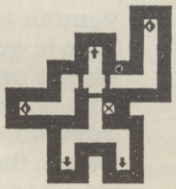

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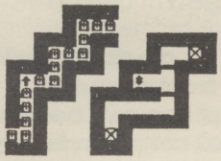

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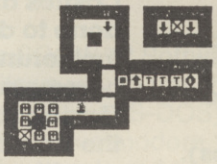

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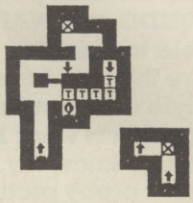

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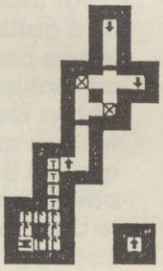

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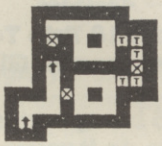


Level Eight

25

luck for some reason starts to desert everyone. The cause of this is the Bracelet of Turani which up to now carried its charms that kept the Green witches quiet and everything orderly. The Witches, having run out of patience being peaceful, concocted a plan to overthrow the power of the bracelet. They promised members of the public untold riches if they would hide or conceal a charm from the bracelet. The result of all this is that the Bracelet has had all its charms stripped so its powers of luck and tranquility are fast running out.

Your task as resident hero, is to locate all the missing charms, find the bracelet put it all back together and turn it against the witches. Finding the charms will give you certain magical powers to use in the adventure, and they all have lovely names, for instance; Doodah makes it rain, Thingy makes the sun shine, Watchercallit makes things come back (remember the troll in Collosal Caves) and Oojimy freezes things. The game plays very easily, although I must start to criticise the Scrolls parser. There are silly things like opening gates which unless they are locked should not have to be opened first before entering. It is one area where Infocom have improved, providing you are carrying the right key, the door if locked will open why oh why should you have to input "open door with rusty key" if you already have it. There is no doubting the documentation in Jinxter, along with the game disc, you get a newspaper, a Guardian memo suitably coffee stained and scribbled on, and a beer mat competition. Look out for a certain postman called Lebling (wonder where that name came from). As a piece of entertainment it is superb.

PERSONAL RATING 9

Gnome Ranger

Level 9 £9.99

At last Level 9 have shaken off the mantle of the mega corporations and gone back, temporarily at least, to publishing their own product. There is no doubt that each year the Austin boys manage to upgrade their adventure system and squeeze even more text into 64K machines. How much further can they go? Regular readers will have read my interview with the Austins and it seems from that chat that the limits are boundless. Gnome Ranger is a product of Levels 9's new system and is an altogether more satisfying game than say Knight Orc. By now you will have gotton used to the non mapping system and Gnome is a lot easier to understand, so it stands to reason that what we have here is an end result that justifies the means.

The story concerns Ingrid (rumour has it that she was originally called Paula, but thats another story) who is Sloane Gnome banished by her family for her outragous beliefs, and forced to find her way back

CONTINUED ON PAGE 96

Adventure!

by hook or by crook engaging some help from as many creatures as she can befriend. All the usual commands are here along with the new GOTO and FIND inputs. Also FOLLOW, RAMSAVE UNDO and WAIT FOR are available to use. The graphics are the now familiar digitised style and can be turned off (which is what I do because you all know my feelings about pretty pictures). A sequel is planned and I for one will be in the queue for it. More please, boys.
PERSONAL RATING 8

Astrodus Affair

Mark Turner 118 Tyle Teg, Clydach Swansea W. Glam S. Wales

Number 5 in my series of home grown do-it-yourself adventures from you the readers, and the best so far. Thanks Mark for providing me with some entertaining moments, even though I spotted a few spelling errors. The game is set in the year 2120 on board the space ship Astrodus which is the victim of a scavenger attack that leaves you as the sole survivor of the crew. You realise that if you could find the tools to repair the ship it would then be all yours to fly around the Galaxy in, so off you go to sort it all out.

Mark has put in some tricky puzzles and one or two very nice touches like giving you a gentle hint that something nasty will happen if you continue on at certain points. There is quite a lot of toing and froing from room to room and I would take a leaf out of Pete Austin's book here and try and group the puzzles and objects needed in accessible places for continuity. The graphics, considering I don't like graphics in adventures, are pleasantly atmospheric, and the way you have started the game with a puzzle i.e. the lack of heating is well thought out.
PERSONAL RATING 7

Soup The Castle

Derek Morris (16 YRS)

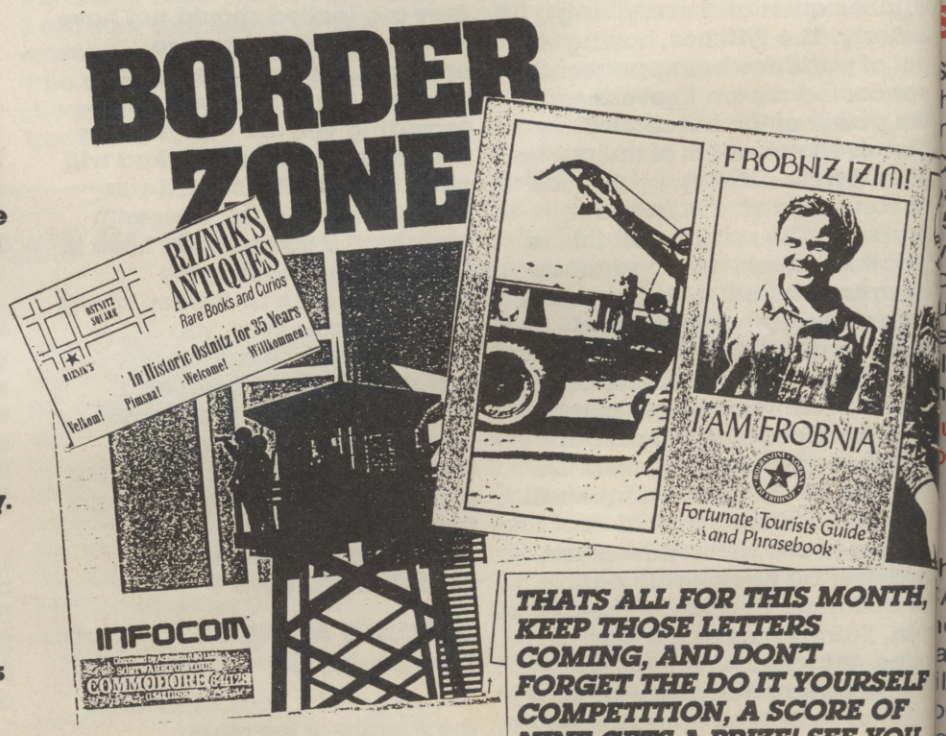
Rumour has it that young Derek here is quite friendly with Mark Turner and that they compete with each other writing adventures. If this is the case, Derek, then I'm afraid Mark has won this round. It's not that I disliked Soup, it's just that it was rather ordinary in the plot line. Castles and vampires are a bit done to death these days, and fashioning stakes out of wooden hammers is a bit obvious. Having said that, the twist about the drawbridge near the end is great!!

For those of you reading this and getting very confused, Soup is one part of a series of little adventures that make up a whole. Derek has the idea of writing an adventure based around the ingredients of a bowl of soup. All the player has to do it find each ingredient in each sub plot. It is a novel idea, and based on what you have done so far Derek, I urge you to continue. Just try and make the plots a bit more lateral or at least original in their settings. Keep up the good work and let me know when you have done it.
PERSONAL RATING 5 (because the plot's a bit thin)

Borderzone

Infocom £19.95

Back in December's column I wrote of Borderzone and that the concept of playing three different characters in one adventure really excited me. Not only that, the plot built around espionage in a foreign land sounded so good that I plagued the hell out of Activision to let me at it. The reality is a bit of a let down. The adventure is in three parts. In the first you are a businessman on a train innocently drawn into the spy arena by a wounded American agent who passes a document to you and tells you to deliver it to a contact at the border station. The second part is you as that wounded American agent, and thirdly you become the Russian at the centre of an assassination plot. I found the three sections to be too short, and not enough real gameplay included. Like Plundered Hearts, a lot of the story unfolds without any input from the player. The absence of the save routine via a bug hindered my enjoyment even further, although a saving grace is the bags of atmosphere. All in all though not as good as I had hoped it would be.
PERSONAL RATING 6



THATS ALL FOR THIS MONTH, KEEP THOSE LETTERS COMING, AND DON'T FORGET THE DO IT YOURSELF COMPETITION, A SCORE OF NINE GETS A PRIZE! SEE YOU NEXT MONTH.

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128 Helper

The 128 Helper is the first electronic reference manual for the 128. Let's say you are in the middle of writing a program in Basic when your realize that you need more information on a specific command, just touch the help key, almost instantly a menu appears with all Basic commands, select the command in question and a screen of detailed information appears, at the press of a key you return to your Basic program. The most exciting feature of the 128 Helper is the program is user definable. The program will guide you to create your own custom screen files. This program will only cost you **£24.95.**

The Big Blue Reader CP/M

New from SOGWAP Software Inc., The Big Blue Reader allows you to transfer files generated on most IBM-Compatible (MS-DOS) software to all three modes of the Commodore 128 and vice versa. Thus, files can be transferred to or from MS-DOS, GCR (128 or 64) and CP/M disk formats. The Big Blue Reader requires a 1571 on both the Commodore 128 and 64.

The Big Blue Reader only £29.95.

New 3½ Disk Drives

The new Commodore 1581 1 megabyte disk drive is now available. The NEW 3½in disk drive is compatible with all Commodore computers from the 128 to the 64. This drive has been designed for serious and professional users. It offers 3,160 blocks free, 8,000 bytes per second (31 blocks) loading rate. Software for this drive includes CADPAK, CHARTPAK, Oxford Pascal, Hackpack, Petspeed, GEOS etc. Using the CANNON or Super 81 Utilities most software can simply be copied to the 3½in disks.

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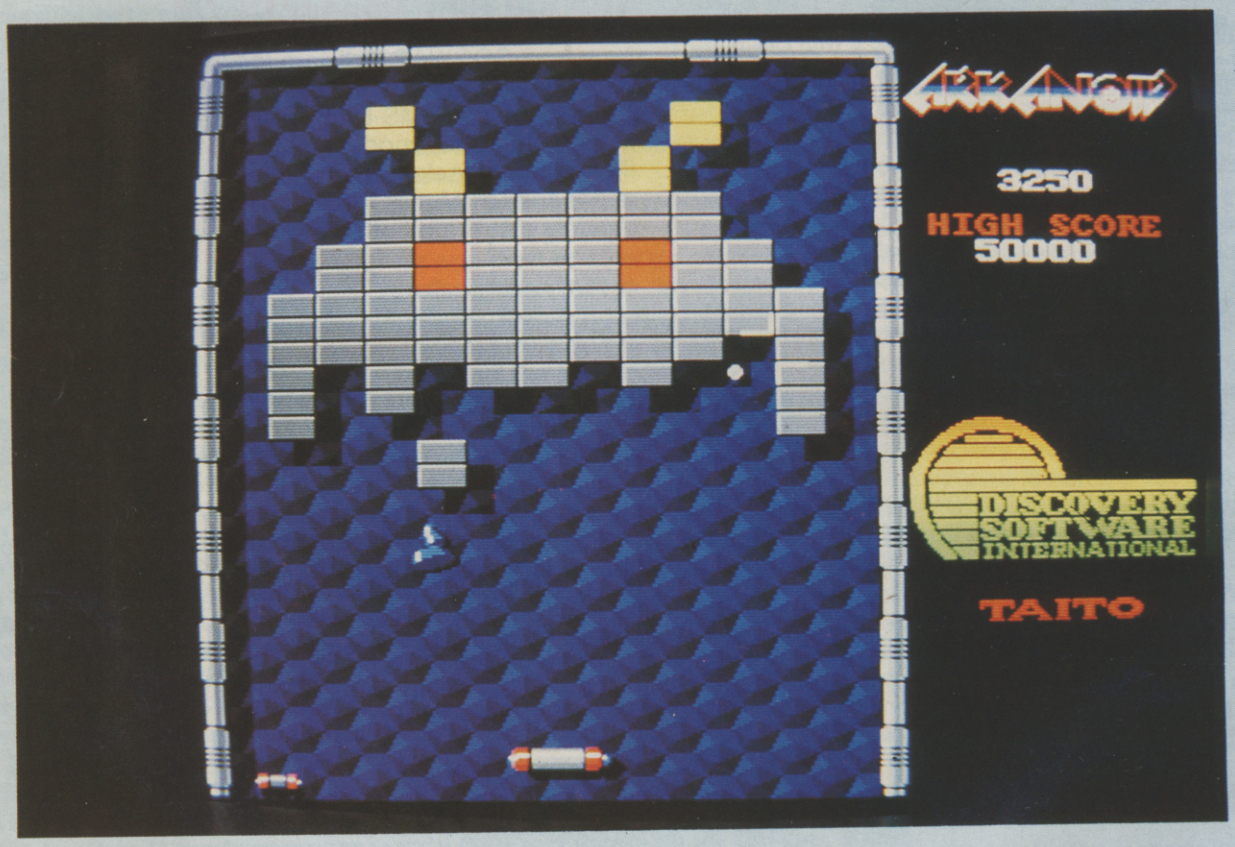


One of the strangest fads to hit the arcades recently must be the revival of Breakout style games. Breakout was little more than a slightly enhanced version of those bat and ball TV game that preceeded today's home computer games. These Breakout machines were so basic, theonly colour were strips of film stuck on the monitors! Then, years later, it turned up again, but this time with much improved graphics, sound and gameplay which it needed to compete with its competitors. Arkanoid was that game.

Since then it has been the source of many home computer games, and a few more arcade machines. The extent of its success still surprises me. Until now, Amiga-owning Arkanoid fans have had a few imitations of varying quality to choose from, but can now play the real thing, and believe me, it is just like the real thing!

The story, as told by a short colourful cartoon strip in the packaging goes like this. In the vast reaches of space, the good ship Arkanoid is carrying 4.5 million humans in suspended animation. These survivors of an alien attack are in search of a new home somewhere among the stars. Suddenly, from out of nowhere, a drone fighter attacks the Arkanoid and causes a flood of gamma radiation into the ship. The two pilots of the Arkanoid eject in the Vaus Craft, leaving the humans safe in their suspension pods. An evil and warped force witnesses the trouble and traps the Vaus in a space labyrinth. Can you control the Vaus and escape these evil forces?

"The basic object is to bounce a ball off a bat which moves along the bottom of the screen, and break every brick on the screen with the ball"

Of course, all that rubbish has nothing whatever to do with the game, it could just as well be the story behind hundreds of totally different games, but that seems the norm with most computer games

anyway. For the .01% of you who have never encountered Arkanoid, Breakout, Impact, Demolition or any other similar game, the basic object is to bounce a ball off a bat which moves along the bottom of the screen, and break every brick on the screen with the ball. When all the bricks have been smashed, the game moves on the screen with a different layout of bricks.

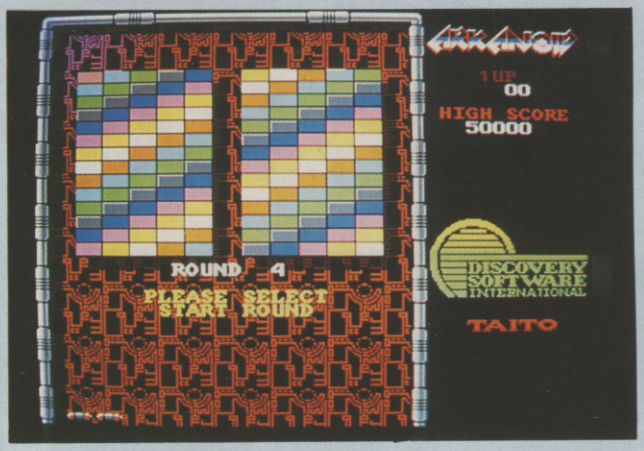
Arkanoid's main deviation from Breakout is in the power capsules which float down the screen throughout the game. When caught, these give your bat extra power or alter the state of the ball. Different capsules can be recognised by the letter which labels them. An S slows down the ball, a C lets the bat catch the bal, an E expands the bat, a D makes the ball split into three, an L gives the bat the ability to shoot the bricks, a B breaks a hole in the wall to the next level, and a P awards an extra life. Four types of aliens bounce around the screen, and will explode on impact with bat or ball, and send the ball in a random direction.

When all the screens have been broken through, the final conflict between you and the evil one (the bloke on the packaging with the fishnet stocking on his head) takes place.

"Apart from the Discovery logo and option to start on any of the first 20 levels, it may as well be straight out of the coin-op!"

Marble Madness set the standard for arcade conversions, and Arkanoid matches it in its complete fidelity to the original. I'll admit that Arkanoid isn't one of my favourite arcade games, but the quality of the conversion simply can't be faulted. Graphics and sound effects are identical, and due to the mouse control, the game plays just the same too. Apart from the Discovery logo and option to start on any of the first 20 levels, it may as well be straight out of the coin-op!

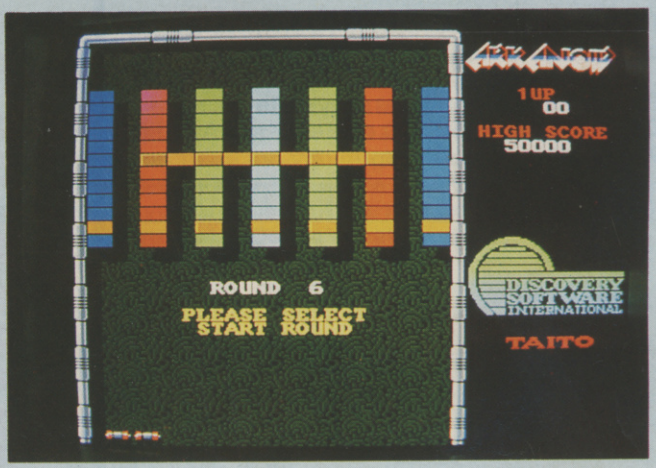
I, as a gamer across a number of computers, may have become a little tired of the Arkanoid



theme, having played similar games a lot recently, but any fan of the coin-op will be delighted to hear that its Amiga version is just as good as the original.

Ocean who converted it to 8 bit computers and the ST, chose not to do the Amiga version, but will be kicking themselves when they see this. It was written in America, but a PAL version is available. At the moment, its UK retail price is unknown, but for a rough guide, it sells for $49.95 in America. Arkanoid is colourful, simple, and will make a good buy for any players starting out in the world of gaming, and of course, the fans of the coin-op. With this, Discovery have proved themselves as a very competent bunch, from whom a few more coin-op conversions would be more than welcome. If you want a game that will become an Amiga classic, go and buy this, you won't be disappointed. *T.H.*

Price: $49.95.



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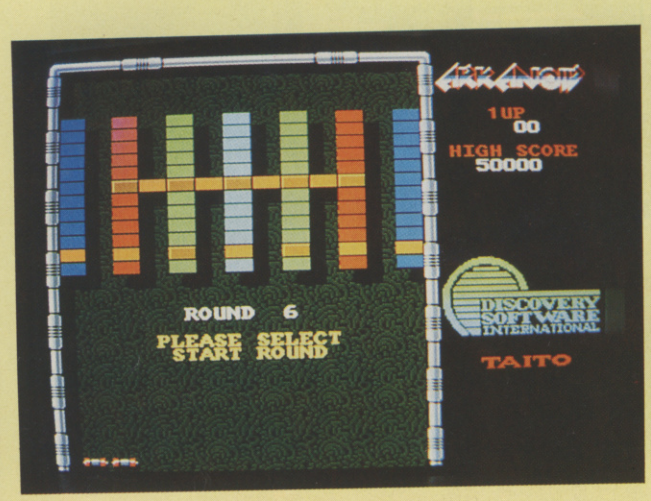

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"Apart from the Discovery logo and option to start on any of the first 20 levels, it may as well be straight out of the coin-op!"

As a special introductory offer from Amiga User International Magazine you can get Arkanoid for £19.95 – £5 off the recommended retail price – an amazing bargain! As our review says (again!) *"If you want a game that will become an Amiga classic, go and buy this, you won't be disappointed."*

HORGAN'S HINTS

Pheenix:
Enter the monitor and type:
3532 60 G3ECa

Future Knight:
Start the game, press help then enter monitor twice and type:
2AE6 4C EE 2A
G2A3F

These cheats come from Christian Kohlrautz of West Germany.

Legionair:
G 1800

Death Race:
G 38CE

Skyhawk:
G 1050

Monkey Magic:
G 1020

Return of Rockman:
G 1010

Andy Tang of London has sent in these codes for anyone still having trouble with the first few opponents in Frank Bruno's Boxing.

Frank Bruno's Boxing:
Fling Long Chop: LBDEEZ
Andra Puncheredov: UATWIW

Mike Kaszubski from USA can be thanked for these pokes.

Treasure Island:
Load, reset and type:
POKE 1162,128 (128 lives)
SYS 4109 starts the game.

Big Mac:
Load, reset and type:
POKE 7001,14
POKE 12711,128
SYS 7000 starts with 128 lives, and pressing 'Y' will skip screens.

Lorenzo Emilitri from Italy has these pokes on offer.

G.W.N.N.
Load, reset and type:
POKE 4323,165:SYS 14336
This will give infinite lives.

Monty on the Run:

```
0 REM MONTY ON THE RUN HACK (C)
AHA 87
10 FOR A=1024 TO 1060:READ B$
20 B=DEC (B$):POKE A,B:C=C+B
30 NEXT A:IF C<> 3607 THEN PRINT
   "DATA ERROR":END
40 PRINT "OK, LOAD IT NOW."
50 DATA A9,FF,8D,D3,2D,4C,10,28
60 DATA A9,00,8D,97,01,8D,5E,03
70 DATA 8D 69,03,A9,04,8D,98,01
80 DATA A9,85,8D,5B,03,A9,91,8D
90 DATA 66,03,4C,40,01
```

Run the above listing, and when the screen reappears, press run/stop and reset. Then type:
G 408 to load the game with 255 lives.

Auf Wiedersehen Monty:

```
0 AUF W. MONTY HACK (C) AHA 88
10 FOR A=1024 TO 1060:READ B$
20 B=DEC(B$):POKE A,B:C=C+B
30 NEXT A:IF C<> 3414 THEN PRINT
   "DATA ERROR!":END
40 PRINT "OK, LOAD IT NOW."
50 DATA A9,FF,8D,21,2E,4C,00,28
60 DATA A9,00,8D,97,01,8D,5E,03
70 DATA 8D,69,03,A9,04,8D,98,01
80 DATA A9,85,8D,5B,03,A9,91,8D
90 DATA 66,03,4C,40,01
```

Use the above listing in the same way as the one for Monty on the Run.

MORE C16!

Koronis Rift:
Enter and run this listing:

```
100 FOR L=320 TO 340:READ
A:POKE L,A:NEXT
110 DATA 169, 1, 141, 26, 23,
169, 114, 141, 29, 23, 76
120 DATA 0, 23, 169, 252, 141,
62, 8, 76, 32, 8
```

Now enter:
LOAD
POKE 1010, 76:POKE 1011, 102
POKE 1012, 1:RUN

When the game has loaded, you will be invincible!

Action Force:
Enter and run this for unlimited ammo, bombs and invincibility.

```
100 DATA 32, 86, 245, 169, 14,
141, 97, 3, 169, 207, 141, 98, 3
110 DATA 96, 169, 173, 141,
211, 144, 141, 247, 144, 108,
253
120 DATA 0, 14, 207
130 FOR L=52992 TO 53019:
READ A:POKE L, A:NEXT
140 SYS 52992
```

Press play and the program will reload, but you will have infinite lives and you cannot get killed on the head screens. If you miss a ball on the head screens the game will appear to have crashed, but it has in fact slowed down. Wait about 30 seconds and the game will return to normal speed.

Phantom:
Load the game as normal, but enter the monitor as soon as the loading screen is printed. Then type:
> **196 00**
G140

The game will continue to load. When the game has loaded, the cursor will be visible (just). Do not clear the screen.
Type:
> **15B4 FF**
> **15C5 OO**
> **258B EA EA**
> **247E A2 01**
> **21F9 EA EA**
> **21C3 EA EA**
> **2476 EA EA**
GOFE8

You will now have infinite energy, keys and ecto-blasters (you will have to pick one up first).

These pokes come from M. Warsop of Penkridge. Load, reset and enter the pokes.

Tutti Frutti:
POKE 10534,255 (gives 255 lives)
SYS 8192

Big Mac:
POKE 12691,255 (gives 255 lives)
SYS 7000

Rockman:
POKE 7409,173 (gets rid of monsters)
SYS 7367

Commando:
POKE 11495, 185
POKE 12707, 185 (enables you to shoot the enemy when they duck)
SYS 4109

Berks:
Load the game, but don't run it, then enter the monitor and type:
M 261E and change 01 to 00 **(RETURN)**
X (RETURN)

Space Pilot:
> **1302 EA EA** for infinite lives
G100D

Gun Law:
A 1A3C NOP (RETURN TWICE)
G 1018 (RETURN)
SYS 4120
(eliminates all enemy)

So what do you think of that lot then? Think you could do better? Well you know what you can do, send them in to your uncle Horgan, and if you're lucky, you might even win the monthly prize of a CCI T-shirt, a year's subscription, and ten whole quidlets! Doesn't that sound yummy!

On a rather more serious (or should that be boring) note, we can only publish material that we believe to be original, and with the permission of the owner of the copyright.

You've been great so far, and let's keep it up through '88. Send your pokes, cheats etc. to address:

Hogan's Hints
CCI
40 Bowling Green Lane
London
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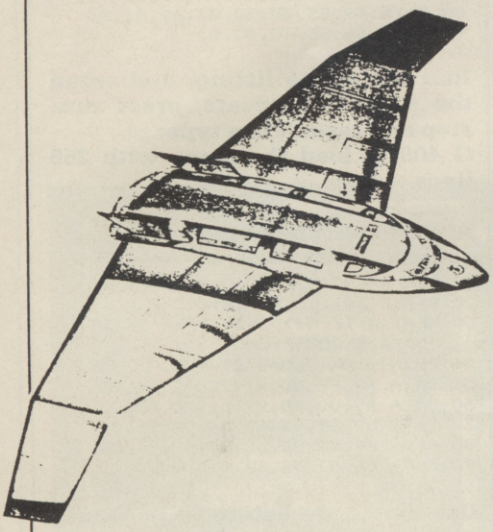
Tony Horgan

Albatross

Rico Gusman and Kirk Duncan
Ikthos Publishing £3.99



Albatross tells the story of Allie, a young girl sometime in the not-too-distant future and her adventures in a kind of dream. "Touch the dream" is the book's subtitle. The tomboy-style Allie save an injured albatross from some rather unpleasant boys and nurses it back to health. When she releases it to fly away, the whole story changes abruptly. Allie — now a princess — becomes involved in a totally different and far distant future where the Albatross is a stolen space vehicle and Princess Allie is a member of a group formed to rescue it.

The group includes a brilliant young engineer, Glyn, with whom Allie falls into an innocent love — though I hasten to add that sex is never even mentioned — and a mysterious captain. They all voyage onto other worlds, under frequent attack and are forced to fight against an evil intelligence — of monstrous form — whose aim is to dominate the universe. Does the story sound a little familiar? Not surprising, for Albatross seems really a combination of many of the ideas most often used in Science Fiction. The book appears to include strong elements of Alice in Wonderland — a tiny being expands to a huge size, a girl heroine (Allie, short for Alice?), a fantastic dream that is given little connection with the other part of the story — with some Star Wars-style fairly lighthearted mayhem to give it an up-to-today feel and hints of Asimov and Heinlein thrown in for extra interest.

That is not saying it is a bad book. Albatross seems to have been written for a youngish readership, say 11 or 12 year olds for whom there isn't much suitable SF anyway. This age group will also probably find many of these ideas quite new and so Albatross has worthwhile interest for them in its own right. The book certainly has an unsophisticated charm and even an eleven-year-old will find it very easy reading. It is also beautifully produced with some very well-designed illustrations at frequent intervals in the book. Albatross is probably the first effort of authors with possibly consider-

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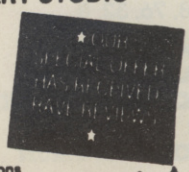

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able potential but they and the book might well have benefited from stronger editing to tighten up the story and the writing. It would probably have given their inventiveness greater stimulation and perhaps lent Albatross increased appeal to a wider audience.

For the experienced SF reader, Albatross will probably prove to be too simple and to contain too little excitement and innovation. However, it certainly hits the target it seems to have set itself — to tell an adventurous and innocently charming story in a way that the 12 year old age group will find interesting and entertaining. It is also excellent value at its very low £3.99 price for an illustrated SF novel.

Z.M.S.

The Technopolis Strategy

Sheridan Tatsuno

A recent TV programme showed how Japan had, by what is called 'Hot-House Training' of its children, raised its collective I.Q. by eleven points since 1946. By the year 2000 it will almost certainly be even higher and today's 'Hot-House' children will be the inhabitants of the nineteen new cities which Japan is hoping will take it into the future on a wave of prosperity.

Sheridan Tatsuno in his book 'The Technopolis Strategy', (Prentice Hall Press. £16.95), shows how the Japanese are planning to become one of the foremost technological nations in the world by the 21st century.

Japan has, since the end of the Second World War, built a reputation as a country renowned for its 'copying' techniques. Now it wants to become a creative society and, to achieve this, its Ministry of International Trade & Industry, (MITI), announced, in 1980, an audacious plan to build a network of nineteen high-tech cities throughout the country which would be the 'engines' for its economic growth in the 21st century.

The cities will contain laboratories and factories specialising in the 'sunrise' industries, such as biotechnology, fine ceramics, electronics, robotics, computers software. The 'model' for them all is America's 'Silicon Valley', the Californian hi-tech region where many of the USA's finest computer scientists work.

In 1981 Japan began sending 'missions' not only to Silicon Valley but also to other hi-tech regions throughout the world gathering ideas for the Technopolis Concept. These missions watched, studied, asked questions and listened, and visited not once but many times, and by the time they returned to Japan they had identified the key factors that led to the success of these areas.

There is already one 'Science City' in Japan. Tsukuba, about 40 miles from Tokyo, was started in 1963 and took seventeen years to complete but, according to one American newspaperman, Lewis Simmons of the 'San Jose Mercury', it is a 'city of brains but it has no heart of soul'. It lacks the variety and stimulation of Japan's major cities. There ae no elderly or poor people, no corner grocery stores, museums or hustle and bustle. Everyone is a scientist or related to one and everything is carefully planned and programmed. Mr. Tatsuno senses that there is a danger that Tsukuba could easily become an hermetically isolated 'elite' society whose inhabitants are intellectually arrogant. The Japanese government, in conjuction with MITI and three other Ministries are determined that the new cities will learn from the lessons provided by Tsukuba. The Technopolis cities will have hearts and souls as well as brains.

Since 1985 the Technopolises have been rapidly building their industrial parks, university research complexes, highways and airports for MITI's target is that by 1990 the basic infrastructures will be completed. Funding is, of course, provided by the Government with a series of tax incentives and low cost loans to firms willing to move into the cities and to the regional councils in the areas in which the cities are being built.

Each region has its own plans. Hamamatsu City, 160 miles west of Tokyo, is now the home of, among others, Yamaha, Suzuki Motors, Nippon Automation (robots), and Ando Electrical (optical communications). In Nagaoka City, 125 miles north of Tokyo, Honda, Nissan and Suzuki are, between them, producing 80% of the world's supply of speedometers, while its University of Science & Technology, (modelled on Britain's Cranfield Technical Institute), has become one of Japan's first experimental universities for basic and applied research in machinery, electronics, construction and managment. A hundred miles south-west of Nagaoka is Toyama City where pharmaceutical companies such as Kokando, Toyama Chemicals and Nichiko are conducting biotechnological research.

Perhaps the name most people will know is Hiroshima and here, too, like a phoenix rising from the ashes, a Technopolis City has been born. Hiroshima now has over 120 companies specialising in computer software as well as a group of small and medium sized companies sponsoring research and development in plastic production robots, printing and adhesives and factory automation.

It seems that Japan's dream of becoming a 'super power' in creative invention by the next century is well on the way to fulfilment but, strangely enough, the other world powers appear to be all but ignoring the enormous development that is going on in the Far East. In particular the USA and, to a lesser extent, the U.K., still have the idea that if it's 'Made in Japan' it can't be very creative. For anyone wondering how the world will be going, technologically speaking, in the next twenty years or so, Mr. Tatsuno's book is of immense interest. I suggest that the powers-to-be in the West's technological fields read it or they may find that by the 21st century — and it's only twelve years away, after all — they will have been well and tryly eclipsed by the Rising Sun.

D.M.

continued from page 56

program was World, a logical extension from the flight-simulator: linked to a large database of world coordinates, the user can 'fly' to any point on Earth at any speed and view the surroundings at any scale; of course a lot of fine detail is lost as even with gigabytes of core you cannot digitise every point on the planet, but advanced fractal techniques are used to generate detail. I went to Machu Picchu in the World simulator and found the fractal rendering of the rough Inca stonework to be quite convincing. At the moment World is empty, but the designers promise an update featuring animals and plant growth next year. The company producing World, Dave Bowman Associates, tell us that there will be a companion program, provisionaly entitled God, which will allow the end-user to create new planets to explore using World. Generating a convincing planet should be possible in about a week using the new software.

I can only mention a few of the remarkable demos in my limited space here; expect proper reviews in later issues. After my 'hands-on' with the Discovery, I talked with the Atari bosses about marketing and pricing of the new machine. Amazingly, the whole system will only cost you #. . . .

*** Extract ends, 'Your Supercomputer' magazine, 21/12/2001

Who knows?

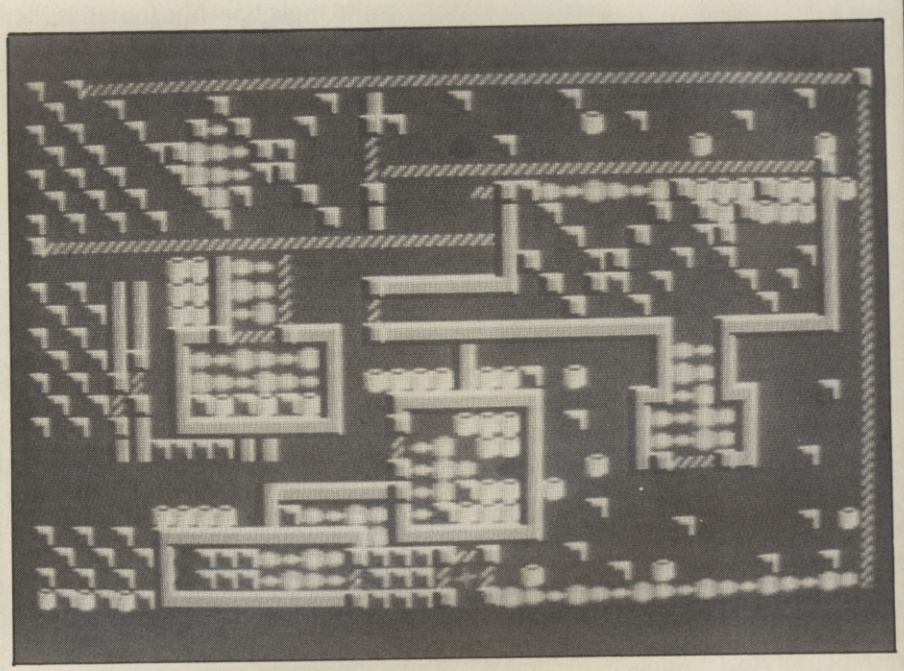
Anything can happen.

Well, I think I'll just print this out and shamble off to make myself another cup of tea. Tea. Remarkable substance . . . .

C16

MEGA

SPORE



by Bulldog Mastertronic

Spore is an attempt at a certain arcade game involving dungeons and dragons — type figures, but also containing such originality that it can stand alone, without having to rely on the arcade games reputation, to sell it. Therefore I don't need to mention the game that it so closely resembles.

A genetic experiment has failed, and now a base has been overrun by genetically engineered spores. Unluckily the only pesticide that will kill them is stored in the base. You, yes that's right, you — the one, that always gets these type of problems to sort out — have been chosen to recover the antidote from the base. It is stored in barrels throughout the buildings and you must collect it all to contain the outbreak.

Thus starts the frantic fight against the spores. When you begin your battle you'll be confronted with all types of on screen information:

Spores: Glowing spheres which swarm at you unless you shoot them first, the problem is they move so fast that you often don't have a chance to get at them before they sap your energy.

Generators: These are solid, red dark squares which act as barriers to you and the spores. You may, however shoot them, and you'll definitely have to do this at some stage of the game because if you don't more and more spores will be made.

Earth: This is a solid light blue mass that disintergrates and crumbles when shot, though it needs several shots to be destroyed totally, the problem is spores can also chew through it.

Barrels: These contain pesticide; you need to collect all of them to get onto the next level.

Flasks: These contain hypergas, which recharges your energy, but watch out, if you shoot them, they disappear.

Pills: Are collected by moving over them, when you have one you can then press the space bar, and get a breather, as the spores are repelled for a short while.

Barriers: These are impenetrable, both to you the spores, but if you shot the pale flashing squares at either end of them you can render them inoperable.

Mirrors: These can deflect barriers at right angles.

"The game is fast and frenetic action"

As you can see there's a lot to get used to in the game, but you get acclimatized to everything fairly easily. The game is fast and frenetic action, and as Gauntlet clones go (oops) clones go, this one plays very well, even on the poor old C16.

As an added bonus to that shooting action, there is a screen designer with which your own screens can be made up, and saved, on tape, to be played whenever you want. This game from the budget masters is excellent value, and, for those of you who still play with your C16's, is a very good blast for the money. Buy it.

Graphics: 69%
Sound: 63%
Playability: 80%
Overall: 83%
Rating: Mega

PLATOON!

WIN A CD!!!

Ocean's great new Platoon game is going to hit the computer world with the impact of a mortar shell on a soldier-packed trench. It looks like it might be one of the top games ever on the 64. Ocean put more man-hours of work into it — they created it in their own programming studio — than any game they've ever done before. The effort has certainly paid off and brought some astounding results — as you can see from the review of Platoon in this CCI.

The movie won loads of awards including Oscars and it is now being released on video. The music from Platoon also got awards and includes top hits like Ben E. King's Stand by Me. Ocean thought you would like to hear the soundtrack album at its best. So they are giving us a terrific Compact Disc player to award as a prize in a special CCI competition. The CD player is for the winner. 25 runners-up will get copies of Platoon the computer game.

All you have to do is:

1. ***Name the war in which the film — and the computer game — is set.***
2. ***Name the Director of the Platoon movie.***
3. ***Name the good sergeant and the baddie sergeant in Platoon.***
4. ***Tell us how many parts there are in the Platoon computer game.***
5. ***Tell us which other military-style Ocean smash hit topped the charts recently.***

The first all correct entry drawn from the CCI Competition Sack by Commprincess Tessa will send the Compact disc player speeding its way to the happy sender. The next twenty-five correct entries drawn out will get the copies of Platooon for their very own screens.

Entries — on a postcard please — to reach us by April 30th, 1988, to Ocean's Platoon Competition, c/o CCI, 40 Bowling Green Lane, London EC1R 0NE.

C64

CRISP

RASTAN

Imagine

Horizontally scrolling kill 'em games have been popular in arcades for ages. Rastan is one of the better ones around at the moment. When I first saw Psygnosis' Barbarian on the Amiga, I hoped it was a Rastan clone, but although it was a good game, it wasn't quite a Rastan substitute. 64 owners can now play an enjoyable version of this fantasy hack and slash 'em up.

Rastan is best described as a cross between Psygnosis' and Palace's Barbarians. You are the leader of a race of barbarians in the land of Maranna. An evil wizard, in an attempt to seize power, has unleashed all the evil forces of the underworld. These evils have materialised in the form of mutated crosses between humans and animals. As Rastan, it's up to you to fight through the continents of your world, to seek out and destroy the wizard and free your people from his wrath.

The first thing I noticed when I loaded it up was the quality of the main sprite. He has been drawn using a similar shading style to that of Palace's Antiriad and although this does leave him a little colourless.

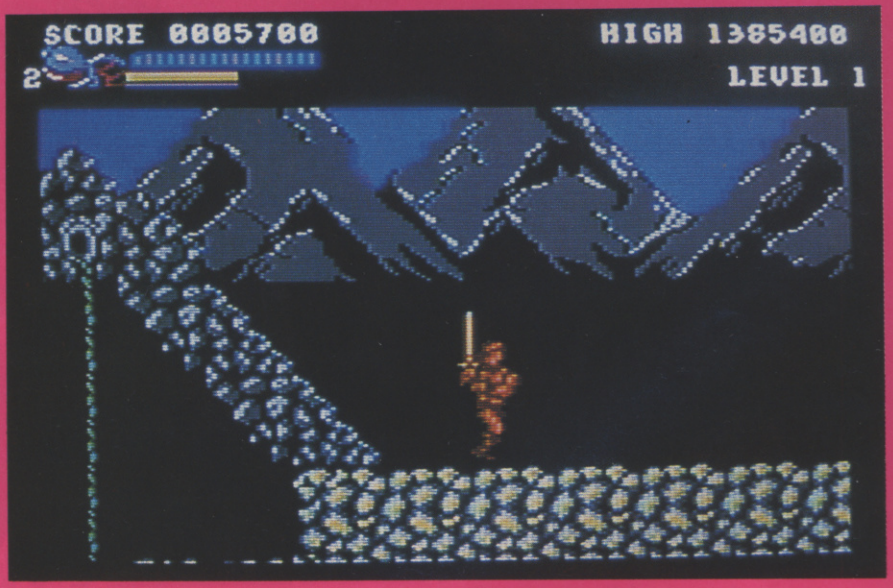
You start the game in the shadow of a vast mountain range. As you venture into the game, a variety of large mutations attack you rather feebly. These are easily dealt with, a quick slash of the sword gets rid of them. Pits have to be crossed with the aid of swinging ropes, and more ropes dangle from the tops of cliffs. The first level also includes a few lava pits to be negotiated. More powerful weapons can be found along the way, and with a well-timed swish of the sword, you could upgrade to a two bladed axe, or even a fireball launching sword.

The game has a simple concept, but I like the arcade version partly because you're always under attack and need constant action to defend yourself. This isn't entirely the case on the 64, and is perhaps its biggest drawback. Too much time is spent walking along with no-one to stab at. My other main criticism is that the backgrounds are somewhat too simple. There's very little variation in background graphics in each level, and this can make it a bit boring at times. It probably is to do with memory limitations as their design is very good by artist Jane Love.

Apart from these points, Rastan is a good conversion. There are a few gameplay differences, but it's basically the same as the win op which is very good. The Rastan sprite is very well drawn, but the baddies look less impressive.

A choice of either music or sound effects can be made on the title screen. Sound effects are average, but the music is a very good copy of the original's, which is instantly recognisable.

When the game is loaded, there are the first two scenes in memory. On clearing these, the next are loaded. The option to continue from the current level after a game is over avoids a lot of loading time for tape users. If Rastan were just that much harder and faster, it could be a very good game. As it is, it relies on some very violent end of level guardians for its toughness which can be frustrating. Even with all these criticisms I've made of it, I did enjoy playing it very much indeed. There are the makings of a great coin-op conversion in Rastan. But there is sufficient to make it worth while. But don't come through really strong enough in the game.



T.H.

Graphics: 79%
Sound: 78%
Playability: 73%
Overall: 74%
Rating: CRISP
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Sysres CONTINUED...

The most interesting of the commands, and probably the most powerful, is the EXEC function. This allows a sequence of commands contained in a SEQ file, to be executed as if they were typed in from the keyboard. It can be used from within a program, to supply the inputs that are requested and it can also run other programs. Sysres provides a means of writing EXEC files by using the PUT command, so writing an EXEC file is no harder than writing a BASIC program. A very interesting use for the EXEC is

"The thought that has been put into this program has resulted in a product that will easily be among the very best programming aids that have been produced for the 64."

to take an ASCII file listing from another computer and enter it into the 64 as if you had typed it in. The program would almost certainty crash if you tried to run it, but it would be in memory ready to modify without the tedious tasks of typing the whole lot in.

There are numerous other functions that Sysres provides, and to be fair I probably have not found them all, but the thought that has been put into this program has resulted in a product that will easily be among the very best programming aids that have been produced for the 64. This program was tested on a C64 with a 1571 drive, and a Super-G printer interface, and also on the C128D in C64 mode, and in both cases the program functioned without any problems. A truly excellent program.

A.E.

Price: £29.95
Contact: Adamsoft 18 Norwich Ave, Rochdale, Lancs OL11 5J2. Tel: 0706 524304.

Midnite Assembly System

CONTINUED...

other programs. The Tricks and Tips section includes 'Do's and Don'ts' and problems that can occur when loading GEOS. The FILEMASTER program provides the ability to alter the contents of the file directory on diskette for your own programs, which can be in either Basic or Machine code, so that they can be converted to GEOS format. The program even allows you to design your own Icons for use with the GEOS display and show your name as author in the information box for the program. An additional program is provided which allows the GEOS clock to be shown at all times thus saving the accessing of the Preference Manager or Alarm Clock features to see the time. The sixth and final chapter contains details fo the workings of GEOS and like the other book gives a file structure and a memory map.

GEOS Versions

The 'How to get the most out of GEOS' book has been written based on version 1.2 of GEOS and therefore some of the programs may not work with earlier versions. In the 'GEOS Inside and Out' book it states that the FILEMASTER program will work both the 1.0 and 1.2 versions of GEOS. However, the other programs will only work with version 1.2. In addition most of the text, routines and memory locations are based on version 1.2 and therefore care should be taken when using these.

Conclusion

Both books are excellent in explaining the main features of GEOS and a beginner could quite confidently pick either. For the more advanced user however, the decision is more difficult and will depend on what the purchaser wishes to get from the book, file import or the use of ones own programs. The programs from both books are available on disk at an extra cost and these could provide the solution of the advanced user. Buy one of the books and both of the disks.

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GEOS 128

CONTINUED...

Accessories

"Geos when you thought it was safe to go into the water!" Along comes more of the desktop accessories. The GEOS disk contains a number of useful programs to assist you whilst you are running another GEOS application.

For example, the calculator can be used while running geoPaint etc. without having to exit from geoPaint. From the menu you are given the choice of several accessories. There is a handy alarm clock which can easily be set and once set no matter which application you're using a tone is heard to remind you.

The calculator has the usual functions also a real joy to use. I like very much one other utility called the notepad, it has 8 pages to use just large enough for a few comments and the sort of thing that will be used a lot.

There are two other accessories which work in a similar way to each other and that is the Photo Album an the Text Manager both are files to keep snippits of documents or illustrations.

Finally if there were not already enough good things in GEOS 128 to take your fancy, Berkeley Software Inc. have given you a Preference Manager. This lets you choose all your screen colours, pointer acceleration and velocity, pointer shape and colour. I think they have thought about everything. GEOS has now a fine selection of compatible software available such as Fontpacks, geoSpell, geoCalc, geoPublish and geoFile.

Thanks to Financial Systems Software Ltd and the other software distributors around the country for bring to us more and more great things for the 128.

B.C.

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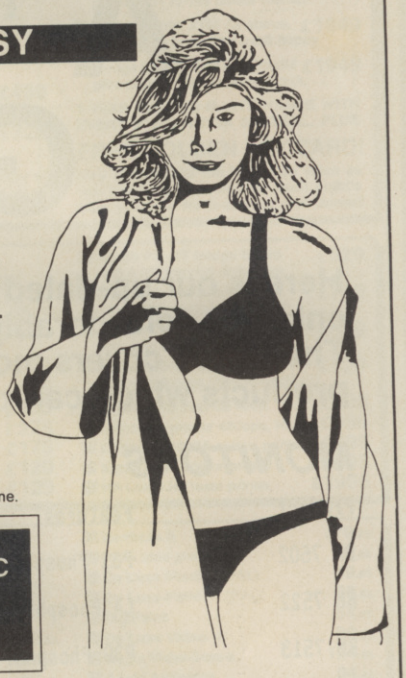

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Feature

ADD-ON GUIDE

Here is our up-dated Add On Guide, covering what's available to enhance considerably your computer's potential and give value for money. The Guide covers monitors, interfaces, modems and other hardware products which can prove to be a very worthwhile investment.

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Product	Features	Machine	Price	Company
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BM 7513	P39 Phosphor Green screen 12" Mono		£99.00 +VAT	Philips
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CM 8852	Colour 0.39 dot pitch black screen Green text switch, full frame and picture controls, foldable foot		£299.00 +VAT	Philips
NEW 9053	EGA Model, Green screen		£499.00 +VAT	Philips
NEW 9073	Amber and Green selection		£529.00 +VAT	Philips
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1431 AP	14" Standard resolution, low complexity colour display, high quality resolution.		£242.00 +VAT	Microvitec - 0274 3900
2030 CS2	20" standard or high resolution with new IBM grey colour.		£386.96	Microvitec

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ADD-ON GUIDE CONTINUED NEXT MONTH!

CRC

By Andy Eskelson

C-128 / C-64

CRC (Cyclic Redundancy Checking) is a very efficient means of ensuring that transmitted data remains intact and that no errors pass unnoticed. Andy has adapted this method to produce a couple of utilities that will read and write any program that makes use of DATA statements to ensure that they can be typed in error free.

With the vast amount of data in use on computer systems, including the humble micro the problem of ensuring that this data is correctly read into the memory of the computer is a vital one. Many systems have been used and one of the most simple is the checksum. This is a simple addition of the data in the block. At first sight this seems to be a good system, providing data security by the virtue of comparing the checksum stored in the data with the checksum calculated as the data is read into the memory. There is a problem with this system because simple checksums are not position sensitive, that means that if you transpose two bytes the checksum will still be correct. Also if one byte changes upwards by one and another changes down by one then again the checksum will still be correct. If this was your bank account data such a problem would probably upset you!.

So what is needed is a system that offers a good chance of spotting data errors that is sensitive to both the value and the position of the data. As this problem was known of many years ago it is not too surprising that the solution was a hardware one. The cyclic redundancy code (CRC) was generated by feeding the data bitwise into a sixteen bit shift register BUT exclusive ORing the input bits with the 16th 12th 9th and 7th bits of the shift register. So the number that is produced is constantly modifying itself, and as the data is fed in bitwise any misplacement of the bits will change the feedback values within one byte. It is this that gives the CRC its error finding power, the chance of an error slipping through this check is something like 1 in 65000, thus providing the sort of protection that is required.

The following sequence of numbers have a checksum of 45 but the CRC in each case is different.

Sequence	checksum	CRC
0,1,2,3,4,5,6,7,8,9	45	DC29
0,1,2,4,3,5,6,7,8,9	45	933C
0,1,2,3,5,5,6,7,8,8	45	2FC2

Thus demonstrating the two main data errors that occur. Note that even if the data changes by only a bit position the value change in the CRC is large, showing the effect of the feedback. The next stage is to program a micro to calculate the crc rather than use some hardware to do it. The code to do this is quite short, but as micro's are designed to operate bytewise, the program must loop eight times to convert the input data into a serial bitstream, and this drastically slows down the operation of any system that uses it. (Many advanced chips incorporate the hardware to perform the crc to help speed up the host system).

Three listings are given, two of which show a practical use for the CRC routine. Listing 1. is the source code of the CRC routine. This code is totally relocatable, that is it will run anywhere in memory without modification or re-assembly. To produce relocatable code is not hard, but great care must be taken not to include any position sensitive code, such as JSR or JMP instructions. This code will run on the C64 or the C128 and the zero page storage requirements are $FA, $FB, $FC and $FD, in the 128 these locations are free and in the 64 they are part of the RS232 buffer and free zero page locations. The assembler used is compatible with all the standard CBM assemblers so you will have no trouble incorporating the CRC routine in any of your own programs. Calling the routine is simple, JSR 'start address' will return with the working registers $FA, $FB, $FC and $FC cleared. JSR 'start address + 9' will calculate the CRC using the data stored in the accumulator. Repeating this will build up the CRC for any amount of data. The CRC is held in $FA (high byte) and $FB (low byte), the routine also returns with a copy of the CRC in the accumulator (high byte) and X reg. (low byte). Remember you must clear the working registers before you star a new CRC calculation.

Listing 2 (for the 128) shows an application of the CRC routine by incorporating it into the well known (and often published) machine code to data statement program. The program will produce the data statements in hex or decimal, thus it conforms to the CCI data statement standard. Error checking

by CRC is the most secure and will ensure that any typed in programs are correct. As an added precaution the CRC routine is checked with a simple checksum just to guard against any errors during typing in. The program is well REM'ed and the only thing to watch out for is the slight modification that occurs in the first line of data that the program creates. It will include the start address, the end address, and the CRC for the program. Providing this information is very useful when reading the data statements back into memory. Lines 340 — 410 contain the code for the CRC routine, and as it is relocatable, you could extract these lines and use them as they stand. C1 would be set to the start address. The end of the data statements will also be marked by the word 'END' placed as the last data item.

Listing 3 shows the data statements reader program, the same zero page working registers are used, but as it is very unlikely that you will be using just the reader program on it's own, you will have to adapt it to work with your own program. To help you the program is very well REM'ed and should present no real problems. The main thing to watch out for is that the CRC code must not reside in the same area that you will be poking the data to !!. There are a series of REM's (lines 340-500) This space has to be filled with one of two versions of the listing, the HEX part or the Decimal part. The program is presented this way as it is pointless to make a reader program universal as it has to be incorporated into your own program anyway. The code will be placed into the address held by M1 (see line 160) and is defaulted to $FF50. In operation the program will read the start and end addresses from the data statements produced by listing 2 and poke them into memory. If they have been corrupted however the program will detect this and report an error. Note the use of the undocumented command RREG a,b,c,d. This will return the values of the accumulator, X reg., Y reg., and status reg. As each line has it's own CRC it is easy to see how the program can detect a line in error, what is not obvious however, is that the CRC is the total CRC for the program UP TO THAT POINT. This means that if you somehow missed a line the program would detect this as an error and report it. So if the error message appears and the indicated line is correct, check that the previous line is in fact the correct one. (It must be correct in itself or the program would have thrown it out as an error).

LISTING 1

```
; put "@0:crc"
;
.opt list
;
;
;
;       ***************************************
;       *                                     *
;       *     general purpose CRC routine     *
;       *                                     *
;       ***************************************
;
;
;       Programmer:         A. Eskelson
;
;             Date:         7th Feb 1987
;
;          Version:         1.03
;
;          now using z-page storage
;
;
;          Status :         Working
;
;  perform a CRC calculation for the input
;  data with xor feedback on the 16th 12th 9th and 7th
;  bits with the input bits.
;
;  An entry point to clear the
;  working registers is included.
;
;  entry is with the acc. set to the input data
;  and the running total of the crc is in the
;  locations crch and crcl
;  Returns to basic with Acc=crch and x=crcl
;
```

CONTINUED...

```
;
;
;
start=$0c00 ; use rs232 input buffer
;                       ; not vital, code is
;                       ; relocatable.
crch=$fa ; crc result loc high byte
crcl=$fb ; crc result loc low byte
crci=$fc ; crc input data storage
temp=$fd ; crc temp storage
;
*=start ; start of program
;
clear lda #0 ; clear the working regs
sta crch ;
sta crcl ;
sta crci ;
rts ; return to basic
;
;
docrc sta crci ; save input data
ldx #8 ; number of rotates
crclop lda crch ; get high crc byte
rol a ; rotate into carry
rol temp ; save in temp
rol a ; roll the 12th bit
rol a ; into the lsb of the
rol a  acc.
rol a ;
rol a ;
eor temp ; do xor function
sta temp ;
lda crch ; reget data
eor temp ; xor the 9th bit
sta temp ;
lda crcl ;
rol a ; roll the 7th bit
rol a ; into the lsb of the
rol a ; acc.
eor temp ;
sta temp ;
rol crci ; get msb data
rol a ; put into lsb acc
eor temp ; eor feedback value
ror a ; into carry
rol crcl ; rotate into crc stores
rol crch ;
dex ; do rest of data byte
bne crclop ;
ldx crcl ; set x to lsb
lda crch ; set a to msb
rts ; back to basic
.end
```

CONTINUED ON PAGE 125

★ Program Submission Procedure ★

DO NOT submit any programme or routine that you do not either own or have proper authority to do so.

ALWAYS include your name, address and the date on all material and any enclosures.
Do not forget to to make it clear exactly which computer/s your programme or article is applicable to.

Include ROM or DOS versions wherever they are pertinent.

Number all pages.

If you have to submit work which is hand-written then you must make sure it is printed clearly.

Never use staples. Use paperclips if necessary.
If you are saving your programme to tape then save it AT LEAST twice on each side.
When you save a programme on disk save it twice and call the second file "BACKUP".

Remember to label all tapes and disks with your name and the title of the programme. Label tape or disk with your name and the name or title of the programme.

Always ensure that disks are well packaged. They should ideally be sent in a commercial disk mailer or at least packed between two pieces of hardboard or rigid plastic.

Please allow at least 8 weeks for acknowledgement as all programmes have to be thoroughly tested and made into a suitable format.

Enclose a self-addressed stamped envelope or package if you would like your programme to be returned.

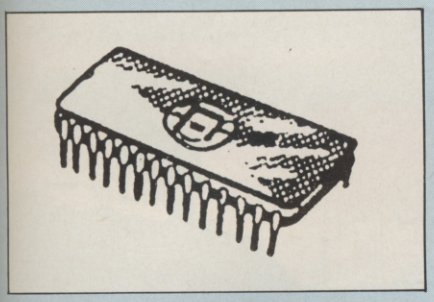
★ Programming tips ★
If you can, use CHR$(x) type commands instead of those hard to read graphic symbols.
If necessary renumber your programme on completion as many readers use auto number utilities to ease typing in.

Try to keep instructions within the programme itself as a sensible level. You can expand on them within the accompanying text if necessary.

TEST your programmes before submitting them or even better get a friend to test them for you.

If a programme contains machine code data please use decimal and not hex as there are fewer digits to be confused. Try and keep the same number of data statements in each line. Please add some form of error checking if your programme contains any more than five lines of data.

TECHNICAL DEVELOPMENTS



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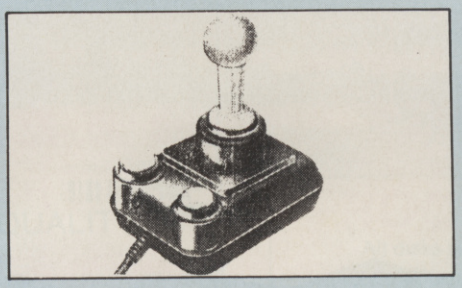

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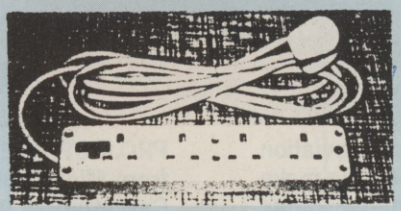

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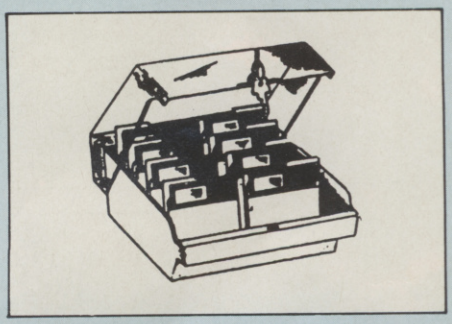

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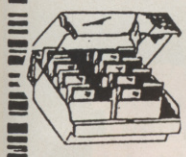

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LISTING 2

```
100 REM       CYCLIC REDUNDANCY CHECKER
110 REM
120 REM (C) 1987 BY A. ESKELSON & G. CATTLEY
130 REM
140 REM CRC STORED IN BANK 0 AT $FF50
150 C1=DEC("FF50"):C2=C1+9
160 PRINT CHR$(147);"WHERE DOES YOUR MACHINE CODE LIVE"
170 INPUT"BANK NUMBER";BA%
180 IF BA%<0 OR BA%>15 THEN 170
190 INPUT"HEX START ADDRESS";SA$
200 SA=DEC(SA$)
210 INPUT"HEX END   ADDRESS";EA$
220 EA=DEC(EA$):IF EA<SA THEN PRINT"ERROR";CHR$(7):GOTO 190
230 INPUT"START LINE NUMBER";LN:PN=LN+10
240 PN=LN+10:PUDEF"0"
250 IF LN<661 THEN PRINT"OVERWRITES CRC PROGRAM !!":GOTO 230
260 INPUT"NO OF DATA ITEMS PER LINE; MAX 16";ND
270 IF ND<1 OR ND>16 THEN 260
280 INPUT"HEX OR DECIMAL FORMAT H/D";HD$
290 IF INSTR("HD",HD$)=0 THEN 280
300 REM SET UP CRC MACHINE CODE
310 BANK 0:CC=0:FOR I=0 TO 59:READ ZZ$
320 ZZ=DEC(ZZ$):CC=CC+ZZ:POKE C1+I,ZZ
330 NEXT I
340 DATA A9,00,85,FA,85,FB,85,FC
350 DATA 60,85,FC,A2,08,A5,FA,2A
360 DATA 26,FD,2A,2A,2A,2A,2A,45
370 DATA FD,85,FD,A5,FA,45,FD,85
380 DATA FD,A5,FB,2A,2A,2A,45,FD
390 DATA 85,FD,26,FC,2A,45,FD,6A
400 DATA 26,FB,26,FA,CA,D0,D6,A6
410 DATA FB,A5,FA,60
420 IF CC<>8900 THEN PRINT"ERROR IN CHECKSUM DATA":STOP
430 REM CREATE DATA STATMENTS
440 SYS C1:REM CLEAR COUNTERS
450 IF HD$="D" THEN E$=",-9999":ELSE E$=",END"
460 FOR I=SA TO EA STEP ND
470 PRINT CHR$(147);CHR$(17);CHR$(17);CHR$(17);PN;"DATA ";
480 FOR J=0 TO ND-1:BANK BA%:PE=PEEK(I+J)
490 IF HD$="D" THEN PRINT USING"###";PE;
500 IF HD$="H" THEN PRINT RIGHT$(HEX$(PE),2);
510 PRINT ",";
520 BANK 0:SYS C2,PE
530 IF I+J=EA THEN J=ND-1
540 NEXT J
550 RREG A%,X%:C=256*A%+X%
560 IF HD$="H" THEN PRINT HEX$(C);
570 IF HD$="D" THEN PRINT USING"#####";C;
580 IF I+J>EA THEN PRINT E$;
590 PRINT:PN=PN+10:PRINT"GOTO 610";CHR$(19)
600 GOTO 650
610 NEXT I
620 PRINT CHR$(147);CHR$(17);CHR$(17);CHR$(17);LN;"DATA";BA%;",";
630 IF HD$="H" THEN PRINT HEX$(SA);",";HEX$(EA);",";HEX$(C);CHR$(19)
640 IF HD$="D" THEN PRINT SA;",";EA;",";C;CHR$(19)
650 POKE 842,13:POKE 843,13:POKE 844,13
660 POKE 208,3:END
```

CONTINUED...

Program

LISTING 3

```
100 REM CRC DATA STATMENTS READER
110 REM SET UP CRC
120 REM CAN BE PLACED ANYWHERE IN RAM
130 REM BUT REMEMBER TO BE IN CORRECT BANK
140 REM M1=CLEAR CRC COUNTER=CRC LOAD ADDRESS
150 REM MC=CALCULATE CRC
160 MB=0:BANK MB:M1=DEC("FF50"):MC=M1+9
170 CC=0:FOR I=0 TO 59:READ ZZ$:ZZ=DEC(ZZ$)
180 CC=CC+ZZ:POKE M1+I,ZZ:NEXT I
190 REM DATA FOR CRC
200 DATA A9,00,85,FA,85,FB,85,FC
210 DATA 60,85,FC,A2,08,A5,FA,2A
220 DATA 26,FD,2A,2A,2A,2A,2A,45
230 DATA FD,85,FD,A5,FA,45,FD,85
240 DATA FD,A5,FB,2A,2A,2A,45,FD
250 DATA 85,FD,26,FC,2A,45,FD,6A
260 DATA 26,FB,26,FA,CA,D0,D6,A6
270 DATA FB,A5,FA,60
280 IF CC<>8900 THEN PRINT"ERROR IN CHECKSUM DATA":STOP
290 REM DECODE CRC DATA STATMENTS
300 REM  AND POKE INTO MEMORY
310 REM READ BANK,START ADDRESS,END ADDRESS,FINAL CRC
320 READ BA,SA$,EA$,TC$:EQ=0
330 BANK BA:SYS M1:REM CLEAR CRC
340 REM
350 REM
360 REM
370 REM
380 REM
390 REM
400 REM
410 REM
420 REM
430 REM
440 REM
450 REM
460 REM
470 REM
480 REM
490 REM
500 REM
510 LOOP
520 REM TEST LAST CRC AGAINST TOTAL CRC
530 REM ERROR IF EQ=1 OR CK<>TC
540 IF EQ=0 AND CK=TC THEN END
550 REM ERROR FOR DATA READ
560 REM PRINT ERROR MESSAGE AND LINE
570 PRINT"LINE/DATA ERROR IN LINE";
580 PRINT PEEK(66)*256+PEEK(65):END
```

LISTING 3 (DEC)

```
335 REM DECIMAL FORMAT
340 SA=VAL(SA$):TC=VAL(TC$)
350 DO:REM START OF LOOP
360 READ DA$:REM READ THE DATA
370 IF DA$="-9999" THEN EXIT:REM FINISHED ALL THE DATA
380 DA=VAL(DA$)
390 REM IF LEN(DA$)>3 THEN MUST BE CRC
```

```
400 IF LEN(DA$)=3 THEN BEGIN:REM DATA
410 REM PUT DATA INTO MEMORY
420 BANK BA:POKE SA,DA:SA=SA+1
430 BANK MB:SYS MC,DA:REM DO CRC CALCULATION
440 BEND:GOTO 510
450 REM CRC TEST
460 REM READ CALCULATED CRC FROM REGISTERS
470 RREG A%,X%:CK=A%*256+X%
480 REM COMPARE TO DATA STATMENT CRC
490 REM EXIT IF ERROR:EQ IS ERROR FLAG
500 IF CK<>VAL(DA$) THEN EQ=1:EXIT
```

LISTING 3 (HEX)

```
335 REM HEX FORMAT
340 TRAP 570:SA=DEC(SA$):TC=DEC(TC$)
350 DO:REM START OF LOOP
360 READ DA$:REM READ THE DATA
370 IF DA$="END" THEN EXIT:REM FINISHED ALL THE DATA
380 DA=DEC(DA$)
390 REM IF LEN(DA$)>2 THEN MUST BE CRC
400 IF LEN(DA$)=2 THEN BEGIN:REM DATA
410 REM PUT DATA INTO MEMORY
420 BANK BA:POKE SA,DA:SA=SA+1
430 BANK MB:SYS MC,DA:REM DO CRC CALCULATION
440 BEND:GOTO 510
450 REM CRC TEST
460 REM READ CALCULATED CRC FROM REGISTERS
470 RREG A%,X%:CK=A%*256+X%
480 REM COMPARE TO DATA STATMENT CRC
490 REM EXIT IF ERROR:EQ IS ERROR FLAG
500 IF CK<>DEC(DA$) THEN EQ=1:EXIT
```


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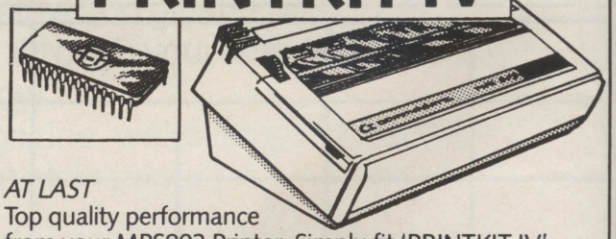

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Resolution: 0.1m.m. or, 10 points/m.m., or 250 points per inch
Absolute Accuracy: +/- 0.5m.m. (0.020")
Surface: Harmless to magnetic media - does not interfere with nearby devices, such as monitors
Stylus: Steel tipped with on/off switch incorporated in stylus

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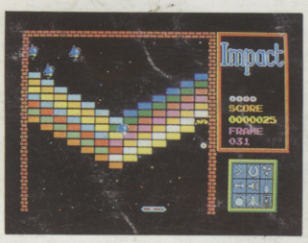

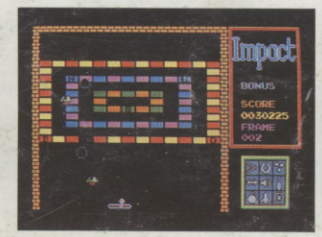

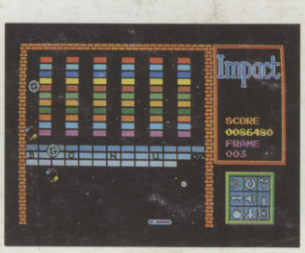

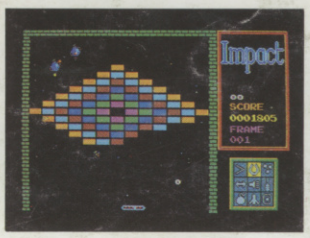

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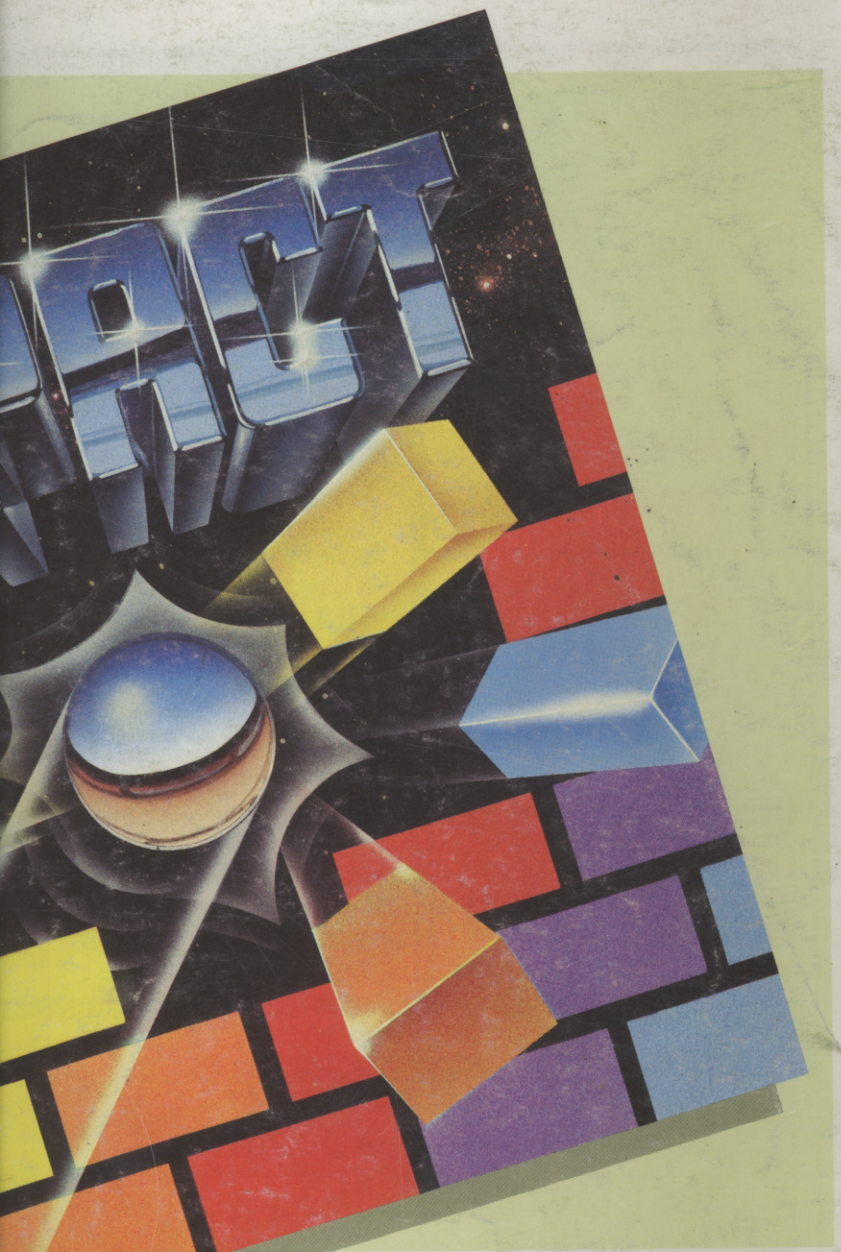

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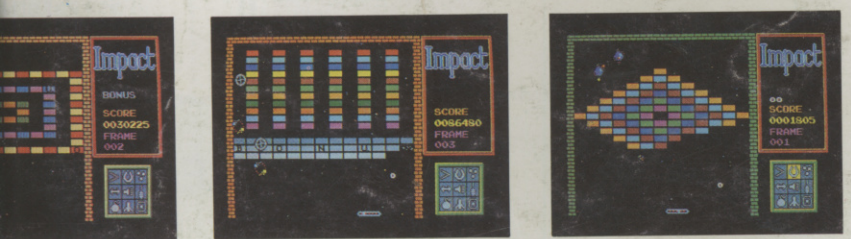

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